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CITY OF GUELPH

[General Public] 15

PLANNING STUDIES 1960

SECTION ONE

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Government
Publications

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RYDEN & SMITH

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85 Frederick Street Kitchener, Ontario
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March 1, 1961.

To His Worship Mayor W. E. Hamilton,
and Members of Council of The
Corporation of the City of Guelph.

Gentlemen:

We are pleased to submit herewith "Section 1, Planning
Studies 1960, City of Guelph".

The studies presented herewith were authorized by
By-law 4996 of the City of Guelph, passed on the 18th day
of July, 1960 and constitute the first Section of studies
intended to provide sufficient basic information on exist-
ing and future features of the Municipality to permit the
Planning Board and Council to reach decisions on the follow-
ing six items:

1. The desirability of a comprehensive Official
Plan for the entire City.
2. The desirability and need for the establish-
ment of a Committee of Adjustment pursuant to
the provisions of Section 17 of The Planning
Act, 1955.
3. The need and possible methods of establishing
regional planning for the City and surrounding
area.
4. A study of future growth needs and the how,
when and where of possible annexation.
5. The desirability and effect of possible
industrial development to the east of the
present City of Guelph

.... 2

Members: _____ C.S.L.A. & T.P., _____ T.P.I.C., _____ I.P.T.P., _____ A.I.P., _____ A.S.P.O., _____ U. L. I. _____

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March 1, 1961.

6. A comprehensive re-study and up-dating of the existing Restricted Area (Zoning) By-law with a view to making amendments necessitated by changing times and conditions.

Section 2 of the Studies is intended to be completed in 1961. This Section will add additional basic studies and expand those presented in Section 1 as may be required to carry out the decisions of the Planning Board and Council concerning each of the six items referred to.

All of which is respectfully submitted.

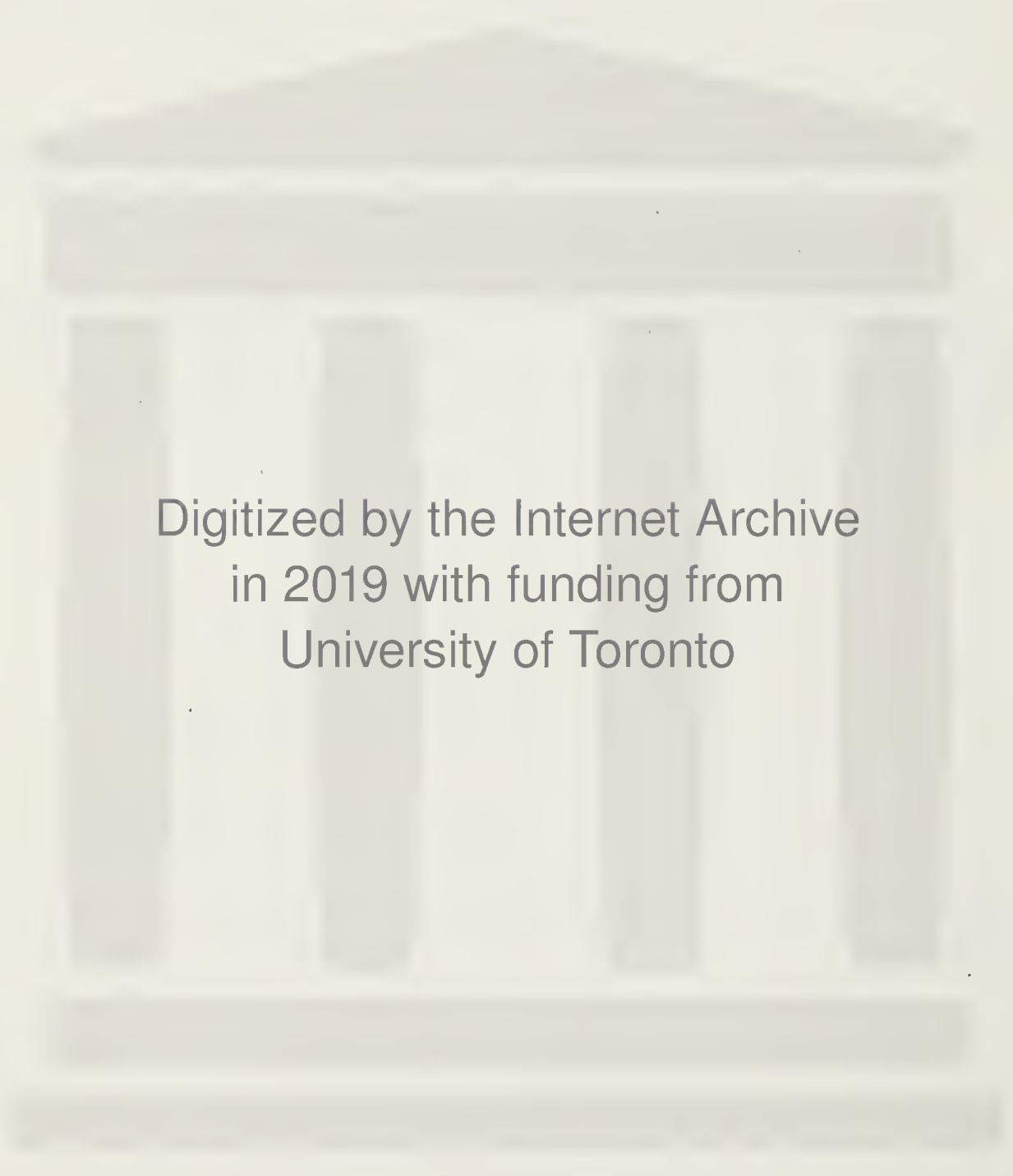
Yours very truly,

DRYDEN & SMITH,
Planning Consultants.



Howard S. Smith.

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INSTRUCTION AND AUTHORIZATION

Planning Studies 1960

City of Guelph.

INTRODUCTION

INSTRUCTION AND AUTHORIZATION

On February 1, 1960 we were requested to submit to the Guelph Planning Board a preliminary outline of the information and studies which we would recommend be undertaken before consideration by the Planning Board and Council of the following six major problems affecting the future growth and development of the City of Guelph.

1. Desirability of a comprehensive Official Plan for the entire City.
2. The desirability and need for the establishment of a Committee of Adjustment pursuant to the provisions of Section 17 of The Planning Act, 1955.
3. The need and possible methods of establishing regional planning for the City and surrounding area.
4. A study of future growth needs and the how, when, and where of possible annexation.
5. The desirability and affect of possible industrial development to the east of the present City of Guelph.
6. A comprehensive re-study and up-dating of the existing Restricted Area (Zoning) By-law with a view to making amendments necessary in view

of changing times and conditions.

On February 29, 1960, as instructed, our firm submitted a preliminary outline of the information and studies which we recommended should be undertaken before consideration could be given to these problems.

Subsequently, the Council by By-law 4996 passed on the 18th day of July, 1960, authorized the preparation of Section 1 of these studies and directed Dryden and Smith to prepare the studies for consideration of the Planning Board and Council.

The matters on which we were instructed to report in Section 1 were:

1. General Geographic and Soil Maps necessary for the study of future growth areas.
2. Existing Land Use Maps.
3. Existing Use and Condition of Building Study.
4. Study of Existing Municipal Services and Possible Extensions.
5. Population Study.

It is intended that Section 1 of the study as presented herewith be part of the overall study only and that no firm conclusions or recommendations are possible until all of the studies have been completed.

TIME PERIOD:

In the preparation of the studies it was necessary to define a time period for which prediction of the future would be attempted.

In making predictions for such a period it is impossible to say "This will be" but only to say "This is what is likely to be" assuming that development continues in general accordance with past performances and apparent future trends. It then becomes necessary to determine a reasonable period during which past performance and apparent trends could be applicable.

An arbitrary period of twenty years (i.e. 1960 to 1980) was adopted as being the reasonable maximum period for such prediction.

ACKNOWLEDGEMENTS:

We are indebted to many sources and individuals for information and statistics included in this report. We would like particularly to acknowledge the assistance of the Department Heads and Departmental Staffs in the various City Departments for their assistance and guidance; of Professor N. R. Richards and Mr. D. W. Hoffman of the Ontario Agricultural College for making available to us unpublished Soil Survey material and to the many other individuals and bodies who assisted in providing much of the information contained in these studies.

We have not felt it necessary in this part of the report to list all the Source and Reference material used but a listing of such sources and references will be included in the final Report.

"Planning Studies 1960, City of Guelph" is prepared in two parts. Part 1, being a Summary for quick and convenient reference and Part 2, containing a more detailed explanation of the material summarized in Part 1.

It is not intended that this Section of the Studies should in itself provide sufficient information on which conclusions may be drawn but must be considered as a progress report of the preparation of the complete Planning Studies.

SUMMARY

Planning Studies 1960

City of Guelph

SUMMARY (PLANNING STUDIES 1960 CITY OF GUELPH)

Section 1

It is not intended that this section of the Study should in itself provide sufficient information on which conclusions may be drawn, but must be considered as a progress report of the preparation of the complete Planning Studies.

TIME

An arbitrary period of twenty years (that is 1960--1980) has been adopted as the reasonable maximum for which predictions would seem possible. The Study is based on this time.

POPULATION INCREASE

Population prediction is based on two assumptions:

1. That there will be no major war.
2. That there will be no major economic recession as was experienced in the 1930's.

Subject to these two qualifications the Report provides a forecast of the future growth problems of the City and area.

WORLD POPULATION: Chapter 2

World population is forecast to increase from the present three billion to over four billion during the study period and that the World "population explosion" may well affect the growth rate of Canada and Guelph. (See Plate 1).

CANADA POPULATION: Chapter 3

Based on predicted Birth Rate, Death Rate, Life Expectancy and Immigration Canada's total population is forecast to increase from its present eighteen million to approximately 27 million during the Study Period. (See Plate 2).

ONTARIO POPULATION: Chapter 4

Ontario population is forecast to increase from its present six million to over nine and one half million during the Study Period.

South western Ontario which contains approximately seven percent of the area of the Province will contain approximately eight and one half of the forecast, nine and one half total Ontario population. (See Plate 3).

GUELPH POPULATION: Chapter 5

Population is forecast to increase at an average rate of 3.5% per annum over the Study Period (vs. Ontario rate of increase forecast of 2.4%) and that the population will increase from approximately 38,500 to approximately 77,000 by 1980. (See Plate 4).

EXISTING LAND USE: Chapter 6

This Chapter deals with the existing use of each property in the City and discusses in a general way the implications of the existing land use pattern, under the headings of One Family Residential, Multiple Residential, Retail Commercial, Industrial, Service Station, Public Buildings, Institutions and Public Open Space and Combined Uses. (See Plate 5).

RESIDENTIAL LOT SIZES: Chapter 7

This is a study of average lot widths in the various sections of the City to determine general residential zoning regulations required and to indicate the trends of lot size requirements which will affect the future land needs for urban growth. (See Plate 6).

EXISTING BUILDING CONDITIONS: Chapter 8

The existing condition of each structure within the Municipality has been plotted on the detail maps. This Study will not only indicate types of zoning regulations required but indicates the areas where special study and possible Rehabilitation and Conservation methods may be necessary. (See Plate 7).

POPULATION DISTRIBUTION: Chapter 9

Chapter 9 deals with population distribution by wards and age groups for the years 1950, 1955, and 1959. This Study indicates major variations in the rate of growth in the various wards of the City and discusses briefly the implication of these various rates of growth in the different age groupings as it will affect the future of each ward. This information is summarized in table 6 and is shown on Plate No. 8.

POPULATION DENSITY: Chapter 10

This Chapter deals with the sixteen "residential density areas" shown outlined on Plate 9.

Each of the sixteen areas is discussed in some detail as to existing uses, future uses, acreages, existing densities, existing population and predicted future population.

The Chapter also deals with the potential of the vacant areas zoned for residential purposes. The information is summarized in Table 7. (See Plate 9).

WATERMAINS, STORM AND SANITARY SEWERS: Chapter 11

Plates 10 and 11 indicate the water and sewer trunk lines as an indication of the possible directions of growth which could be most easily serviced by extension of these mains.

GEOLOGY AND GEOGRAPHY: Chapter 12

This Chapter deals with the physical characteristics of the sub-surface structure in the areas throughout and surrounding the City, and with the form and character of the natural features and conditions of the ground surface throughout and surrounding the City.

SOILS: Chapter 13

The soils throughout and surrounding the City for a radius of approximately five miles have been grouped in three main categories as Good Development Land, Fair to Poor Development Land and Areas of Unstable Depression Lands on which development would be most difficult. In so far as possible future growth must take advantage of the good development lands and avoid the unstable depression lands.
(See Plate 12).

SLOPES: Chapter 14

The area in a five mile radius of the City has been studied to indicate areas of moderate, gentle slopes of steep and complex slopes and of depression lands where slopes are less than one percent.

Future development should be encouraged in the moderate gentle slope areas and the depression lands avoided.
(See Plate 13).

NATURAL DRAINAGE AREAS: Chapter 15

This Study shows the limits and direction of flow of each of the drainage areas in a five mile radius surrounding the City.

Drainage area limits indicate natural limits for development stages.
(See Plate 14)

CHAPTER 1.

POPULATION FORECASTS

Although planning may some times appear to be preoccupied with the physical attributes of a community, it is obvious that the fundamental concern of planning must be the needs and preferences of people and that the only justification for planning is the ordering of the physical attributes of a community to better serve its people.

Planning Studies 1960

City of Guelph.

POPULATION

If planning and the planning process is to be successful, the first and major consideration must be people; their total number, both present and future; the density in various sections of the City; the family structure; the number of persons per age group; their location, their needs and their preferences.

Our first consideration must therefore be with the total numbers of people with whom we are to deal, both present and future. To intelligently appreciate the future population growth, consideration must be given to all the factors which will influence this growth during the study period.

As pointed out in the "Introduction" we have accepted twenty years as being a reasonable period for which to attempt to predict and to plan, and population predictions in this report are for that period and they assume two things:

1. That there will be no major war, and
2. That there will be no major economic recession as was experienced during the 1930's.

Subject to these two qualifications, we feel it is possible to provide a population forecast with sufficient accuracy to suggest the scope of the future growth problems but warn that such forecasts must be used with caution. This caution is expressed

in the Introduction to the Preliminary Report of the Royal Commission on Canada's Economic Prospects and we feel it should be repeated here:

"The only thing that can be said with certainty about such forecasts is that events will prove them wrong, at least in part. To stress that fact, however, is not to minimize the value of a survey of future probabilities. On the contrary, we believe that such forecasts, fallible though they necessarily are, may be of high value in suggesting measures for dealing with the problems which may be expected to arise. At the same time we believe that such a survey of future probabilities and developments should be critically re-examined at fairly frequent intervals. Undoubtedly some problems which loom large to-day will fade into relative insignificance in the years to come, while new and pressing problems will emerge which cannot now be foreseen. This would seem to call for flexible policies and a willingness to revise them with changing circumstances."

CHAPTER 2.

WORLD POPULATION.

Planning Studies 1960

City of Guelph.

WORLD POPULATION

We believe that in the past, population studies have frequently been too limited in their scope and that forecasts have been prepared which failed to recognize the importance and effect of population growth and population movement over very wide areas. In this era of very fast mass migrations of people, it is obvious that growth factors in any part of the world or indeed, the total population increase of the world itself can have and undoubtedly will have direct affect on any specific part. We have therefore included in this report some consideration of population forecasts not only for Guelph, but also for Ontario, Canada and the World.

The present rate of World Population increase is considered by many to be the most serious problem and the greatest threat to mankind which the world faces.

Certainly there has been no precedent in World History on which to evaluate the impact of the present population increase rate. There would seem to be no doubt that the effect of what is commonly referred to as the "World Population Explosion", and the pressure for living space by the millions being added annually to the World Population, is going to be felt during the study period; particularly in such under-populated countries as Canada. A brief examination of this growth reveals some very startling facts.

World population as estimated by the Statistical Office and World Population Divisions of the United Nations indicates that the present rate of increase in World Population is approximately 1.6% annually or an annual increase in population of between 40 and 50 millions. It also indicates that between the years 1900 and 1960, as many people have been added to the World Population as were added in the 500,000 years before 1900 which scientists generally agree man has been on the earth. They also predict that at the present rate of increase the world population will double again in forty years and will be double that figure in the preceding 25 years. (SEE TABLE 1).

TABLE 1

WORLD POPULATION

	TIME PERIOD	POPULATION INCREASE	WORLD POPULATION
to 1900	$\frac{1}{2}$ million yrs.	1,500,000,000	1,500,000,000
1900 to 1960	60 years	1,500,000,000	3,000,000,000
1960 to 2000	40 years	3,000,000,000	6,000,000,000
2000 to 2025	25 years	6,000,000,000	12,000,000,000

We feel that during the study period this tremendous increase in world population may force major changes in the immigration policy of many of the countries throughout the world and that these changes may well affect

the population increase rate for the City of Guelph.

To better evaluate the importance of world population increase, it might be wise to examine briefly the reasons for this tremendous upsurge in world population.

POPULATION INCREASE

Population increase is the outcome of three factors:

1. The Birth Rate - (i.e., the number of babies born per thousand population each year).
2. The Death Rate - (the number of deaths per thousand population each year).
3. Life Expectancy- (the average life span).

We feel that it is desirable to examine each of these factors briefly.

Birth Rate

Contrary to what might be expected in view of the rapidly increasing world population, the birth rate throughout the world has remained fairly constant over the past sixty years. That means, of course, the number of babies born "per thousand population" has remained fairly constant, but, because of the increase in the number of "thousands of population" the actual number of births has increased in a geometrical progression to the point where it is predicted

that an almost unbelievable hundred million babies will be born into the world this year.

Death Rate

Although the number of births is the obvious "cause" of the world population explosion, the primary reason for this population increase is the continually decreasing death rate.

In the past, population growth has been subject to many "natural" controls: flood, drought, famine, locust, disease, plague. These have taken repeatedly large tolls of the world's population.

In the last fifty years, with the tremendous improvement in communications and technological advances, man has been much better able to control or at least alleviate the disaster usually associated with many of these catastrophies. Modern medical methods and the introduction of simple hygiene and sanitation throughout much of the world has almost completely eradicated many of the death dealing diseases such as malaria, yaws, typhoid fever, etc., and the innoculation of hundreds of thousands against the ravages of other fatal or crippling diseases have added many more millions to the world population than any increase in birth rate.

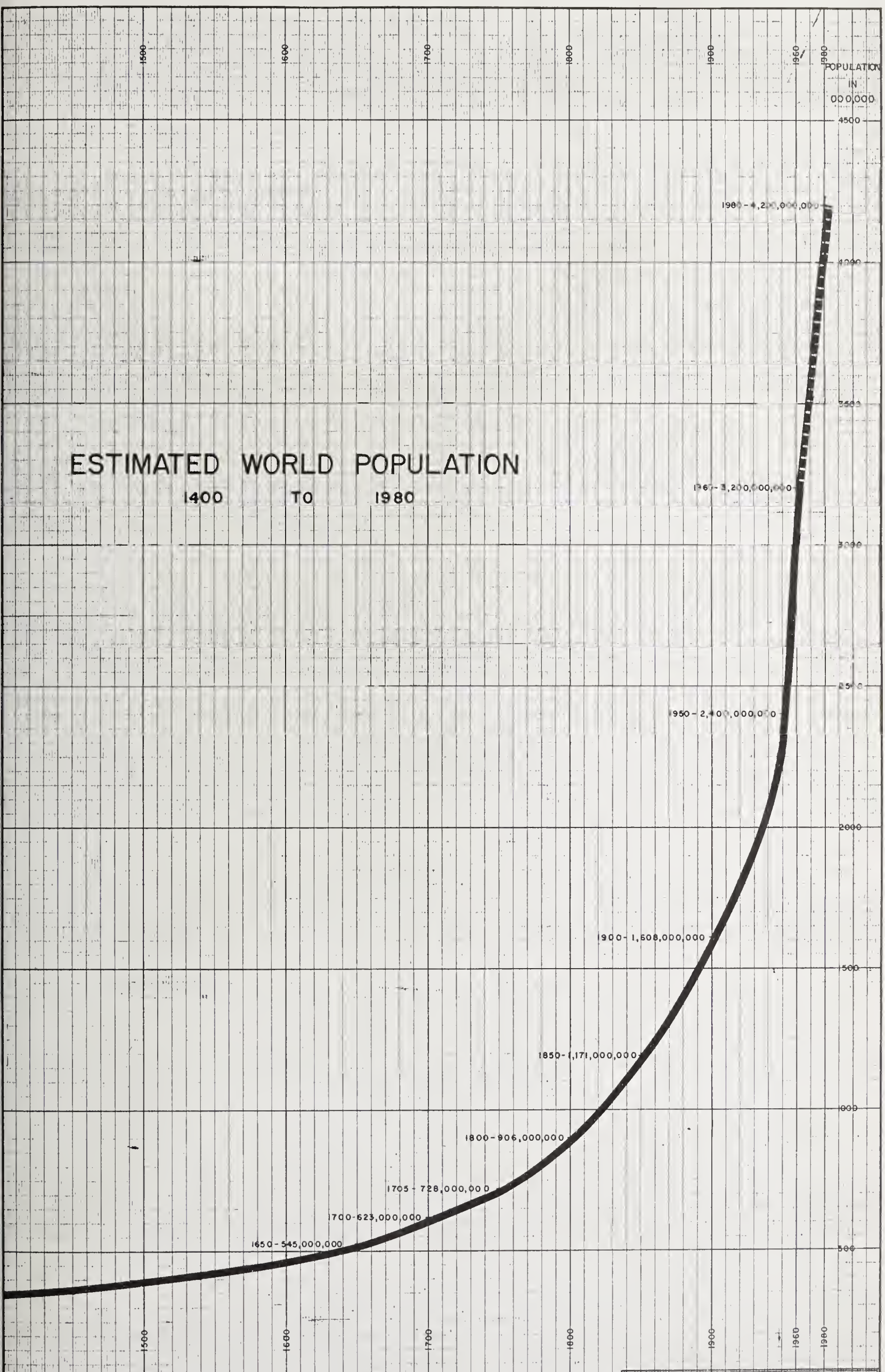
LIFE EXPECTANCY

A further great factor adding to the total world population is the continually increasing "life expectancy at birth" throughout the world. In Canada, for instance, from 1931 to 1951, life expectancy at birth increased for males from 60 years to 66 years and for females from 62 years to 71 years. Although an increase of 10% in life expectancy in a twenty year period may seem to be a remarkable achievement, it is more remarkable to consider that in some parts of Asia in the same twenty-year period, as much as one-third has been added to the life expectancy at birth.

The outcome of these changing factors will mean that during the twenty year study period from 1960 to 1980 the world's population is forecast increase from its present 3 billion to approximately $4\frac{1}{2}$ billion people. (SEE GRAPH 1).

ESTIMATED WORLD POPULATION 1400 TO 1980

POPULATION
IN
000,000



SOURCES

- 1400 TO 1950 - WORLD POPULATION & PRODUCTION TRENDS & OUTLOOKS THE TWENTIETH CENTURY FUND
- 1951 TO 1960 - STATISTICAL OFFICE AND POPULATION DIVISION UNITED NATIONS
- 1961 TO 1980 - CALCULATED AT ESTIMATED PRESENT ANNUAL INCREASE AS REPORTED - WORLD ALMANAC - 1960

CITY OF GUELPH
PLANNING STUDIES 1960

WORLD POPULATION

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DECEMBER 1960 PROJECT 442.80 PLATE No. 1

CHAPTER 3.

CANADIAN POPULATION.

Planning Studies 1960

City of Guelph.

CANADA POPULATION FORECAST

We must now examine briefly how these factors will affect Canada.

Canada's population will of course be determined by the same three factors as world population, birth rate, death rate, and life expectancy plus a fourth and most important one, --- the mass movement of people or immigration.

Birth Rate

An examination of Canada's birth rate indicates that it is one of the highest of any of the industrialized countries of the world. It is higher than the birth rate of either Pakistan or Japan. The Dominion Bureau of Statistics reports that the Canadian birth rate during 1959 was 27.5 per thousand. This compares with the birth rate in the United States of 24.1 and in Japan of 17.5.

Canada's birth rate hit an all time high in 1955 when it reached 28.4 and although there has been minor decreases since that time the Royal Commission on Canada's Economic Prospects, forecasts that during the period of our study from 1960 to 1980 the birth rate in Canada will range between 24.2 and 25.6.

Death Rate

The Canadian death rate is presently one of the lowest in the world and is continually decreasing. In 1939 the death rate in Canada stood at 10.1, in 1959 this figure had dropped to 8.1 per thousand. This compares with the 1959 death rate in the United States of 9.4 in the United Kingdom of 9.6.

Although Canada enjoys a very low death rate at present it is expected that the rate will continue to drop, particularly in the field of infant mortality. In this field the death rate in Canada has been cut by two-thirds since 1921 but it is still double the infant mortality rate in Sweden. It is to be expected that improvements will be made in this infant mortality rate during the study period.

Life Expectancy

At the present time the major causes of death in Canada are from Cancer and Heart Disease. Any important breakthrough in research in these fields might well cause further dramatic increase in life expectancy during the study period.

As an outcome of these factors it is probable that during the next twenty years, Canada will enjoy the highest rate of natural population increase of any of the industrialized nations of the world.

IMMIGRATION

When considering the affect of immigration on population increase the term "Net Immigration" is usually used. Net immigration is simply total immigration minus total emigration. For instance, in the period from 1951 to 1955 Canada's average total immigration was 170,000 per year. The net immigration during this period, or the figures that would be reflected in population increase during this period however, averaged 110,000 per year.

There are three main factors which will influence Canada's total immigration and the net immigration during our study period. They are:

1. Pressure of World Population Increase.
2. The relative economic conditions in Canada and throughout the other countries of the world.
3. Immigration and emigration policy in Canada and in the other countries of the world.

The Royal Commission on Canada's Economic Prospects completed a very thorough study of these factors as they will affect Canada's growth up to 1980 and have concluded that Canada's Net Immigration during this period will be "not less than 50,000 nor more than 100,000 annually" and they use a "mean" figure of 75,000 per year in their calculations. We feel that this is a conservative estimate for planning purposes.

It would seem that plans must be ready to implement, to provide for a much higher rate of net immigration particularly in view of our past immigration record and the pressures for living space which the world population increase will create.

Based on the figures estimated i.e., a birthrate of 25, a death rate of 8.1 and a net annual immigration of 75,000 per year, the population of Canada is forecast by the Royal Commission to increase from its present 18,000,000 to approximately 27, 000,000 by 1980. If, on the otherhand, the "mean" immigration figure does prove to be conservative, the Canadian population might well reach the 28,000,000 mark. (SEE PLATE 2).

This Canadian population increase will be reflected particularly in population increase in south-western Ontario.

POPULATION DISTRIBUTION

If Canada's 18,000,000 people were distributed evenly across Canada's 3,600,000 square miles of area, there would be a density of five persons per acre, but the distribution of population is anything but even. The Province of Ontario which has approximately one-tenth of the area of Canada has over the past forty years always contained approximately one-third of the total population. (SEE TABLE2.)

CANADA POPULATION

1871 TO 1960 (SEPT. 1)

ESTIMATED CANADIAN POPULATION

1960 TO 1980

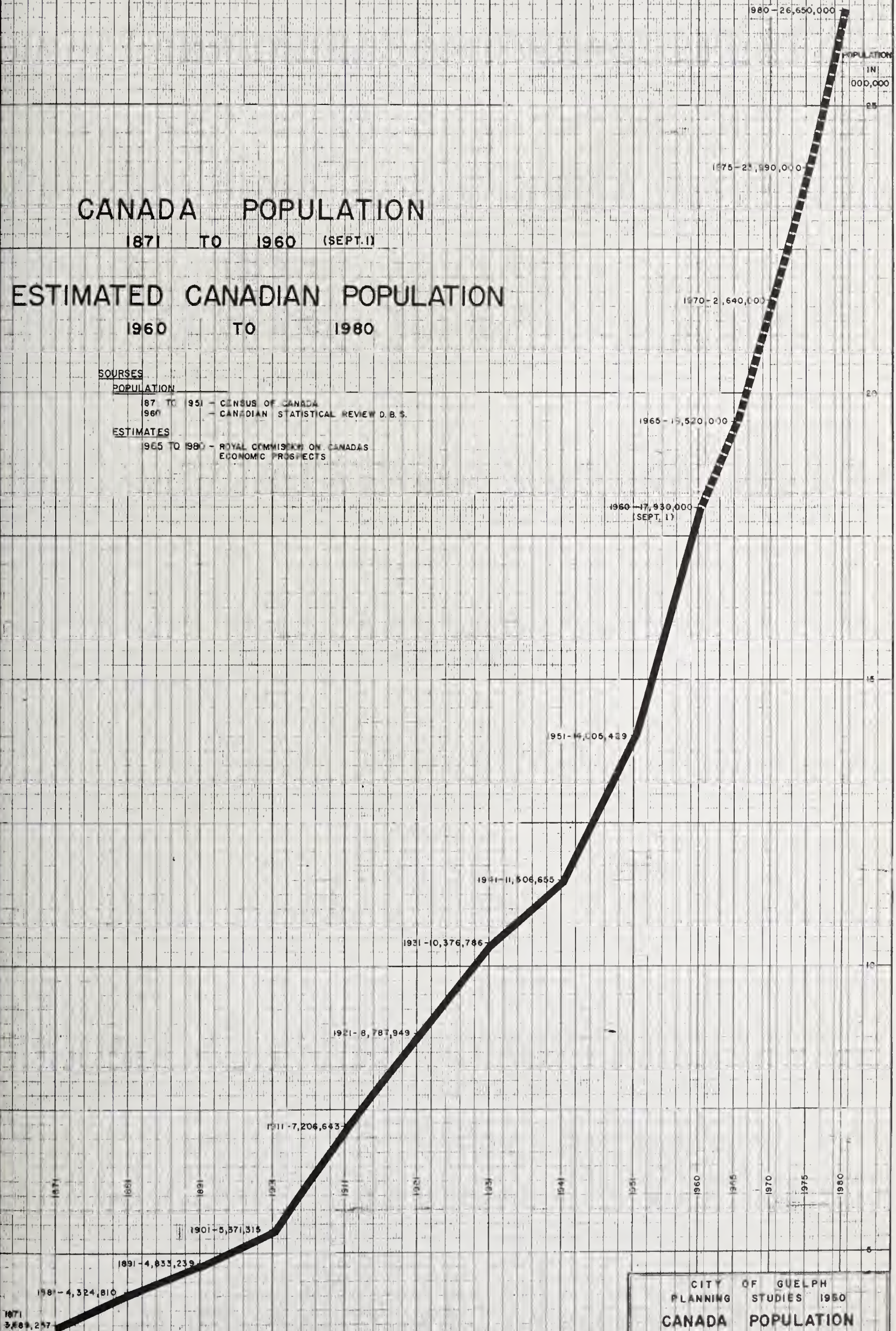
SOURCES

POPULATION

1871 TO 1951 - CENSUS OF CANADA
1960 - CANADIAN STATISTICAL REVIEW D.B.S.

ESTIMATES

1965 TO 1980 - ROYAL COMMISSION ON CANADA'S
ECONOMIC PROSPECTS



CITY OF GUELPH
PLANNING STUDIES 1980
CANADA POPULATION
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DECEMBER 1980 PROJECT 44240 PLATE No. 2

CHAPTER 4.

ONTARIO POPULATION.

Planning Studies 1960

City of Guelph.

TABLE 2.

PERCENTAGE DISTRIBUTION OF POPULATION BY PROVINCES

1901 to 1960

Prov.	1901	1911	1921	1931	1941	1951	1960 Est. Sept.1
Nfld.						2.58	2.6
P.E.I.	1.92	1.30	1.01	0.85	0.83	0.70	0.60
N.S.	8.56	6.23	5.96	4.94	5.02	4.59	4.1
N.B.	6.16	4.88	4.41	3.94	3.97	3.68	3.4
Que.	30.70	27.83	26.86	27.70	28.96	28.95	28.5
Ont.	40.64	35.07	33.39	33.07	32.92	32.82	34.0
Man.	4.75	6.40	6.94	6.75	6.34	5.54	5.1
Sask.	1.70	6.84	8.62	8.88	7.79	5.94	5.1
Alta.	1.36	5.19	6.70	7.05	6.92	6.71	7.2
B.C.	3.33	5.45	5.97	6.69	7.11	8.32	9.1
Yukon	0.51	0.12	0.05	0.04	0.04	0.06	0.1
N.W.T.	0.37	0.09	0.09	0.09	0.10	0.11	0.2

Sources:

1901 to 1951 Census of Canada 1951
1960 Canadian Statistical Review,
D.B.S. Oct.1960

It is estimated that by 1980 Ontario's percentage of the Canadian population will rise from the present 34% to approximately 38.5%, to a total Ontario Population of 9,600,000.

The increasing percentage of the total immigration into Canada which chooses Ontario as a desired place of residence is one of the important factors affecting this increase. In 1905 only 28.3% of the total immigration came to Ontario. Since 1955 over 50% of the total immigration chose Ontario as a place of residence. (SEE TABLE 3)!

TABLE 3.

GROSS CANADIAN IMMIGRATION

selected years 1905 to 1959.

Year	Canada Total	Ontario Total	Ontario Percentage of Total
1905	141,465	40,034	28.3
1915	36,665	12,319	33.6
1925	84,907	28,113	33.1
1935	11,277	4,786	42.4
1945	22,722	9,342	41.1
1955	109,946	57,563	52.4
1956	164,859	90,662	54.9
1957	282,164	147,097	52.2
1958	124,851	63,853	51.0
1959	106,928	55,976	52.6

Sources:

Economic Survey of Ontario 1956
Dept. Economics, Ont.

Canada Year Book 1960. D.B.S.

Ontario's population, of course, is no more evenly distributed throughout the Province than the Canadian population is evenly distributed throughout the country. At the present time approximately 88% of Ontario's population live in an area south of a line drawn from the southern tip of Georgian Bay to Oshawa, or approximately $5\frac{1}{4}$ of Ontario's $6\frac{1}{4}$ million people live in approximately 7% of the area of the Province.

Guelph is in the centre of this area.

REDISTRIBUTION OF POPULATION.

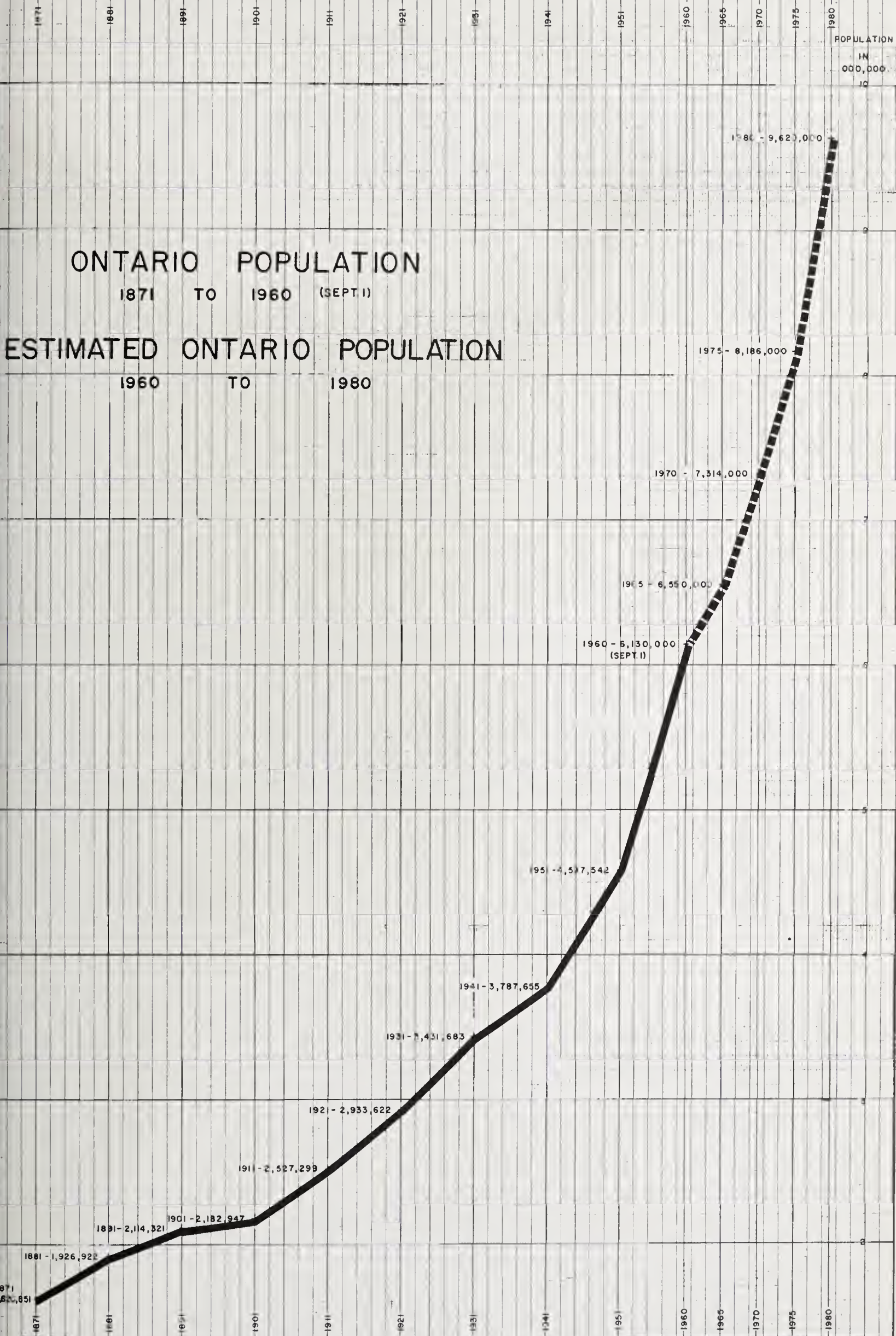
Canada's changing economy continues to cause major redistributions of population, particularly from rural to urban living. In 1900 only 22% of Canada's total population lived in urban centres. In 1955 this percentage had increased to approximately 45%. At the present time approximately 55% of the population is urban and it is forecast, that by the end of our study period, 84% of Canada's total population will live in urban centres with populations in excess of one thousand.

The magnitude of this population shift is illustrated by the forecast of the Dominion Bureau of Statistics that in spite of the total population increase predicted for 1980, the rural population during this period will actually decrease by approximately 200,000.

Because of the concentration of urban centres in south-western Ontario, it would seem reasonable to believe that up to 90% of Ontario's total population will live in this area by 1980, and that the population of south-western Ontario will increase from its present $5\frac{1}{2}$ million to approximately $8\frac{1}{2}$ million. (SEE PLATE 3.)

The prediction of Guelph's future growth must be considered against the background of these growth factors.

ONTARIO POPULATION 1871 TO 1960 (SEPT. 1) ESTIMATED ONTARIO POPULATION 1960 TO 1980



SOURCES

POPULATION 1871 TO 1951 — CENSUS OF CANADA
1960 — CANADIAN STATISTICAL REVIEW O.B.S.

ESTIMATES

1960 TO 1975 — ECONOMIC SURVEY OF ONTARIO
ONTARIO DEPT. OF ECONOMICS

1980 — ROYAL COMMISSION ON CANADA'S ECONOMIC PROSPECTS

CITY OF GUELPH
PLANNING STUDIES 1960

ONTARIO POPULATION

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DECEMBER 1960 PROJECT 442 BO PLATE No. 3

CHAPTER 5.

GUELPH POPULATION.

Planning Studies 1960

City of Guelph.

GUELPH POPULATION INCREASE

Guelph's future growth will be made up from two main sources, the "natural increase" and the increase through immigration (both immigration from outside of Canada and immigration from other areas of Canada into Guelph). It is interesting to examine the relative importance of these two factors affecting growth. The last year for which complete figures are available is 1958. In that year total population increase amounted to 1445

Resident births equalled - 1,023

Resident deaths equalled - 347

Natural increase equalled- 676

So that the increase by immigration must have equalled - 769

It would appear that immigration accounted for over one-half of the total population increase of the City in that year and it would appear from information available that immigration into the City will probably account for at least 50% of the population increase during the next twenty years.

It is difficult to determine the exact number of immigrants who arrive annually in the City of Guelph but the Department of Immigration reports that of the total immigration into Canada from 1946 to 1951,

1.2% was destined for the City of Guelph, or the immediate Guelph area. This would indicate that approximately 1,400 of the 120,000 gross immigration during that period were destined for the Guelph area, each year. This 1,400 is naturally not reflected in population growth because population growth also reflects the number of people who emigrated from Guelph during the same period. But the figure does indicate that immigration is an extremely important factor in the growth of the Municipality and any consideration of future growth must attempt to evaluate the importance of this immigration figure during the study period.

The exact place of residence of immigrants to Canada is dependent primarily on two factors:

1. Job opportunity.
2. Concentration of groups of similar ethnic origin..

I think we can safely presume that Guelph will, during the next twenty years, provide job opportunity equal to any Municipality of its size in Ontario, and that the concentration in Guelph of residents of Italian ethnic origin will make Guelph a desired place of residence for a disproportionately large share of the immigrants into Canada over the next twenty years.

This assumption is based on a study of the source of immigrants which Canada can expect to attract during the next twenty-year period.

These sources of immigrants have changed very considerably over the past number of years. In 1946, for instance, 70% of the total number of immigrants to Canada came from Great Britain. In 1955 the percentage had dropped to less than 27% from Great Britain, and there were compensating increases of immigrants from other sources, most notably from Italy, which increased from 0 in 1946, and has been rising steadily, to nearly 25% of the total in 1959. (SEE TABLE 4).

TABLE 4.

SOURCES OF IMMIGRANTS

PERCENTAGE DISTRIBUTION OF GROSS IMMIGRATION

YEAR	UNITED KINGDOM	UNITED STATES	GERMANY	ITALY	NETHER- LANDS	OTHERS
1946	70.4	16.0	.5	--	3.1	10.0
1947	55.3	14.7	.4	.1	4.3	25.2
1948	36.4	5.9	2.0	2.6	5.6	47.5
1949	21.8	8.1	3.1	8.1	7.2	51.7
1950	17.1	10.6	5.2	12.2	9.7	45.2
1951	16.2	4.0	15.0	12.1	9.9	42.8
1952	27.5	5.7	15.6	12.6	12.8	24.8
1953	27.7	5.6	20.2	14.0	12.0	20.5
1954	28.1	6.6	18.5	15.4	10.5	20.9
1955	26.7	9.5	16.0	17.4	6.0	24.4
1956	30.7	5.4	15.6	17.9	4.7	25.7
1957	38.4	3.3	10.5	10.9	4.1	32.8
1958	21.6	7.8	11.3	22.6	5.9	30.8
1959	18.9	9.7	9.8	24.8	4.9	31.9

Sources:

Dominion Bureau of Statistics
Canadian Statistical Review 1955 Supplement
Canada Year Book, 1960.

The Royal Commission on Canada's economic prospects
dealing with immigration from United Kingdom,
Netherlands, and East Germany reports,-

"It will be increasingly difficult to find suitable immigrants from these sources, because of the relatively high level of economic activity in these countries", and it goes on to report, "particularly in Southern Italy there is a large population surplus, many of whom are under-employed and the Italian Government would like to see much larger annual movements of population, both to North and South America".

This shift in country of origin of immigrants to Canada over the next twenty years might possibly mean that from ten to fifteen thousand immigrants per year into Canada will emigrate from Italy. There would seem to be little doubt that Guelph's existing concentration of people of Italian ethnic origin will make the City of Guelph a desired place of residence for a relatively large share of Canada's total immigration during the study period.

GROWTH RATE

The City of Guelph, during the past ten years, has enjoyed a population increase at the rate of approximately 3.9% annually. This exceeds the rate of population increase for Ontario during the past ten years, which was approximately 3% annually. The latest predictions of the Ontario Department of Economics predicts that the Ontario rate will decrease from the past rate of 3% and that over the next twenty years, the Ontario population increase will probably be approximately 2.4% annually.

This predicted decrease is due to the predicted decrease in immigration.

If we assume that the Ontario population growth rate will decrease from its present 3% annual to 2.4%, this would represent a decrease in growth rate of approximately 20%. If this was applied directly to Guelph at a 20% decrease in the rate of growth, it would indicate that the Guelph rate during the next twenty years would decrease to approximately 3.1% annually.

We feel that a direct application of the 20% decrease does not hold true in Guelph for a number of reasons:

1. The predicted decrease in the immigration rate into Canada from approximately 110,000 annually to 75,000 annually as suggested in the Royal Commission Report, may quite

possibly hold true for the period of 1960 to 1970, primarily because of the relative economic conditions in Canada and in the countries of origin, and because of the immigration policies in Canada and in the countries of origin. We would suggest however, that for planning purposes it is much safer to assume the maximum figure suggested in the Royal Commission Report of 100,000 annually for the period from 1970 to 1980. We feel that the pressure for living space exerted by the additional billions of population during the study period may well force a revision in immigration policy and that tremendous pressures will be exerted on the countries with low population density to admit ever-increasing numbers of immigrants.

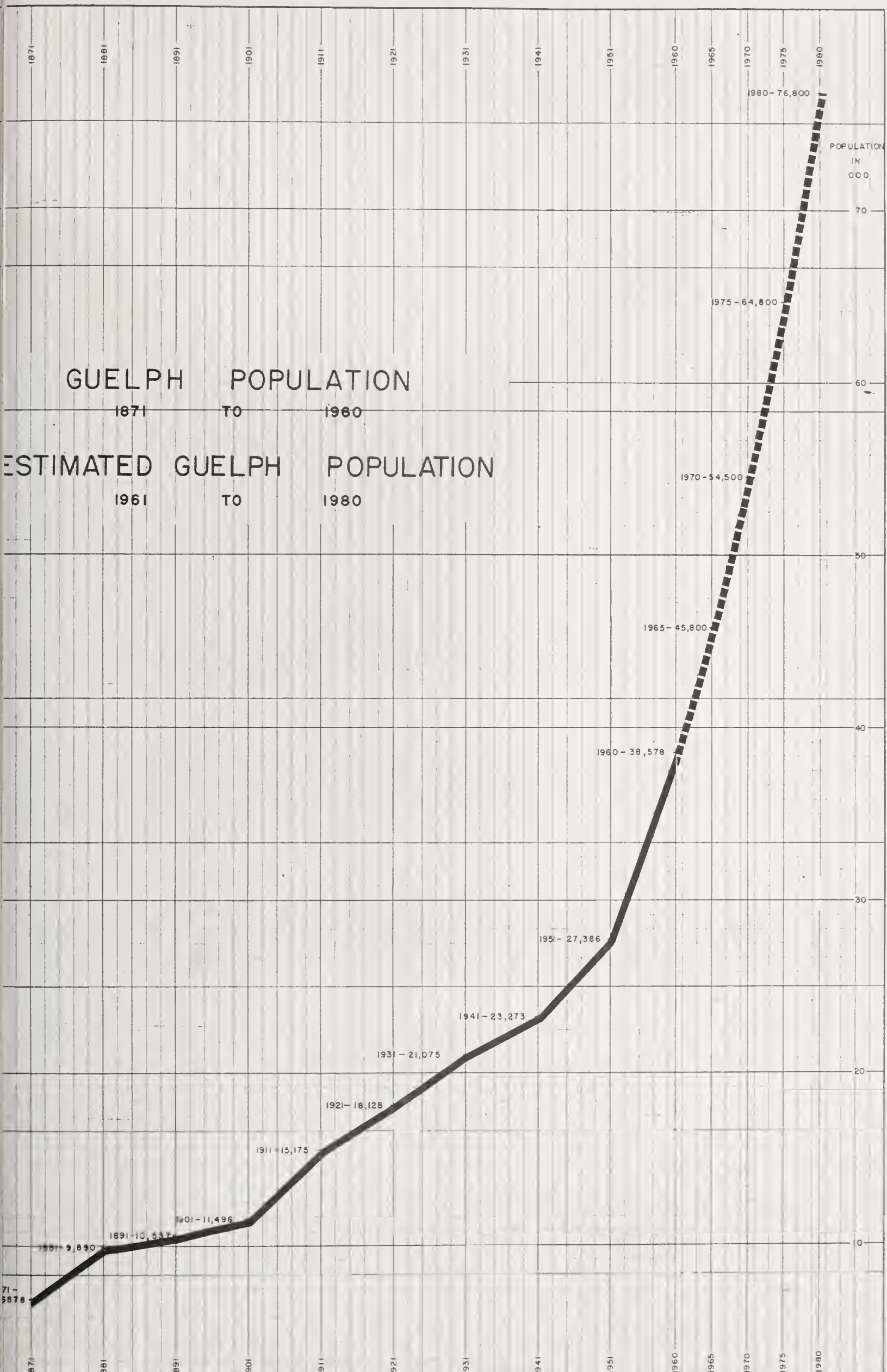
Plans should be ready to implement if such a sudden change in policy caused a major increase in the number of immigrants in any one year or period of years.

2. Because of the shift in the source of immigration, particularly with regard to an ever-increasing percentage of immigrants from Italy, we feel that Guclph will be a desired destination for a disproportionately large share of the total Canadian immigration.

3. Although Ontario's total population will increase at the rate of 2.4%, southern Ontario will receive approximately 85% to 90% of this total.
4. The population of the urban centres during the next twenty years will increase, even if there is no increase in the total Ontario Population, because of the shift of population from rural to urban living. By 1980 it is predicted that over 7 million of the $8\frac{1}{2}$ million living in south-western Ontario will live in urban centres with populations in excess of 1000.

In view of all these factors, it would appear that the rate of population increase for the City of Guelph may not be as high percentage-wise from 1960 to 1980 as it has been in the past ten years, but that the decrease in this rate will be less than half that predicted for the Province as a whole and that for planning purposes, an annual rate of increase of 3.5% per annum compounded must be accepted. At this rate of increase, the population of Guelph is predicted to rise from its present 38,500 to approximately 45,800 by 1965; 54,500 by 1970; 64,700 by 1975; and 77,000 by 1980. (SEE PLATE NO. 4).

For relative increases in population for Canada, Ontario, and the City of Guelph, SEE TABLE 5.



SOURCES

POPULATION

871 TO 1951 - CENSUS OF CANADA
 1952 TO 1958 - ANNUAL REPORT MUNICIPAL STATISTICS - DEPT. OF MUNICIPAL AFFAIRS
 1959 TO 1960 - CITY OF GUELPH ASSESSMENT DEPT.

ESTIMATES

1961 TO 1980 - PLANNING STUDY ESTIMATES (1960)

CITY OF GUELPH
 PLANNING STUDIES 1960
GUELPH POPULATION
 DRYDEN AND SMITH
 PLANNING CONSULTANTS
 KITCHENER
 DECEMBER 1960 PROJECT 442-60 PLATE NO. 4

Chapter 6.

EXISTING LAND USE.

Planning Studies 1960

City of Guelph.

EXISTING LAND USE STUDIES

Plate No. 5

Existing land use studies were carried out on the ground and each property and building investigated separately. The information from this investigation was plotted on some two hundred separated detailed maps showing the individual properties and the use of each property and building. This detailed information will be used in the studies of possible revisions to the Zoning By-law and as a guide in determining the future needs of the municipality for various land use areas.

Plates No. 5 is a compilation of the information on the detailed plans to give the overall picture of the development of the City as it exists.

On this generalized land use plan, land uses have been broken down into the following categories:

1. One family residential use.
2. Multiple residential (including duplex and semi-detached).
3. Retail commercial uses.
4. Industrial uses.
5. Service stations.
6. Public buildings, institutions, and public open space.

7. Combined uses i.e. residential and commercial or residential and industrial.
8. Vacant.

This generalized land use plan does indicate some definite trends in the development of the City and both the revised Zoning By-law and the Official Plan must be drawn to encourage those trends which are desirable and to discourage and correct any undesirable development trends as indicated by the study.

Although it is obviously undesirable to attempt to draw any firm conclusions until all the information is available, it would seem that a brief discussion of each land use category as it exists might be in order in this stage of the report.

ONE FAMILY RESIDENTIAL

It is interesting to note how clearly the one family residential areas within the City can be defined and how little multiple intrusion there has been in these one family areas. For instance the area south of the Speed River with relatively few exceptions is almost all one family development, the area west of Edinburgh road and north of the Canadian National Railway tracks shows very little intrusion of multiple uses, the areas west of Exhibition Street and between London Road and Speedvale and the very large predominately single family area east and north of Homewood and the General Hospital areas.

Although in all these areas minor multiple uses exist, the character of the area is such as to promote and retain the very highest residential values.

Although it is now generally accepted that any well conceived residential neighborhood should provide for all types of residential units, it is obviously necessary to give careful consideration to the proper integration of multiple and single family units within the neighborhood so that each will compliment the other rather than conflict with the other.

It would seem likely that a demand will be felt for the inclusion of multiple development within some of the existing one family areas, and it would seem desirable that any Official Plan and Zoning By-law should make provision for the development of such units, but only as carefully pre-planned groupings and not as indiscriminate locating of multiple units within these fine one family residential areas.

MULTIPLE RESIDENTIAL

As can be seen from the land use, a great deal of multiple housing activity has taken place within the City and this of course indicates a need for this type of accomodation. The heaviest concentration of this type of housing units is in the area surrounding the down-town commercial district and particularly on the north and westerly side of the down-town section. Much of this activity is the conversion of larger and older homes into duplexes and apartments. This trend can also be seen in the area east of the river and south of Homewood and the General Hospital and also in the south east section of the City.

It is obvious from the amount of this type of development which has taken place, that the Zoning By-law and the Official Plan must make adequate provision for additional areas for this necessary type of housing accomodation. It would seem apparent that in any area of larger, older homes, provision must be made for the properly controlled conversion of these buildings for multiple and apartment use.

An increasing interest is being shown by developers and by tenants in the construction of smaller new apartment units. The trend for apartment and garden apartment living has been obvious all across Canada, particularly since the end of the war, and as our urban municipalities increase in size and in

complexity, more and more people seem to find a centrally located apartment a more satisfactory living accomodation than the single family house which must be located farther and farther from the central part of the City.

There is no doubt that future land use planning must make provision for the construction of further apartment units.

RETAIL COMMERCIAL

The central business district of the City of Guelph has been defined and to a large extent its expansion controlled by natural and man made barriers. The river to the east, the Canadian National Railway track to the south and to a lesser extent by schools, churches, and other public buildings on the west. As might be expected the development of the business district has shown a tendancy to move north, particularly along Woolwich Street. There seems to be little doubt that the further development of this commercial area will take place northerly, and north-westerly. There is definite indication that a new Civic Centre type of development is gradually emerging south of the Canadian National Railway track, and although this area may become the administrative and even cultural centre of the City it would seem unlikely and indeed undesirable that retail commercial uses should follow this move.

If the central business district is to thrive, in face of the convenience and attractiveness of the outlying shopping centre, every attempt must be made to make the central business district a compact, attractive shopping area. We believe that any attempt to create retail shopping facilities south of the railway would only add to the inconvenience which exists in all central business districts and is one of the main reasons for the success of the outlying shopping centre.

Neighbourhood shopping facilities are beginning to develop in the residential areas of Guelph as small preplanned commercial units. There seems to be little doubt from present trends that the desire to develop the smaller shopping centre will continue, and provision must be made for them. Experience would indicate that it is impractical to attempt to pre-determine the exact location and area required for the centres but the Official Plan studies for future residential neighbourhoods should indicate the approximate location and amount of land which should be set aside for such neighbourhood shopping facilities.

Any community or regional shopping centre on the other hand, we feel should be the subject of an Amendment to the Zoning By-law and the Official Plan, and should only be approved after a most careful and comprehensive study of the complete proposal as presented.

INDUSTRIAL

As can be seen from a glance at the generalized land use, industrial development in Guelph in the past has tended, as in most municipalities, to follow the lines of the railways, and so generally the past industrial development has tended to form a band running from east to west across the southerly section of the City following the lines of the Canadian National and Canadian Pacific Railway.

A sharp change in this trend resulted from the establishment of the major industrial basin in the north west section of the City. There seems to be little doubt that future major industrial development will seek location in such pre-planned industrial basins and there will be a tendency for the older plants presently located in the southerly section of the City to re-locate in the industrial areas as existing plants become obsolete and as it becomes more and more difficult to find adequate room for expansion.

SERVICE STATIONS

The land use map shows the location of each existing service station in the municipality. This land use is separated from all other uses, primarily because experience has indicated that service stations have requirements peculiar to their own trade and their location is frequently a matter of dispute. A separate and distinct zoning category for service

stations has been found to be a useful method in assisting the proper location of these outlets. They are frequently the subject of special reference in the Official Plan.

PUBLIC BUILDINGS, INSTITUTION AND PUBLIC OPEN SPACE

The generalize land use plan groups all these uses in one category and consequently there would appear that from the generalize land use plan to be relatively large amounts of open space available within the municipality. But in breaking these uses down and to indicate the ones that are actually available to the public for park or recreation purposes indicates that the amount of this land is limited and that great care should be taken to preserve what is available and where ever possible to increase and add to these recreation and park areas. Everything possible should be done to encourage the fine work that is being done along the Speed River and wherever possible to encourage a similar type of river front development on the branch of the Speed River which runs through the heart of the town.

Consideration should be given in all new plans of subdivision for the provision of small play areas for younger children wherever this is possible.

COMBINED USES

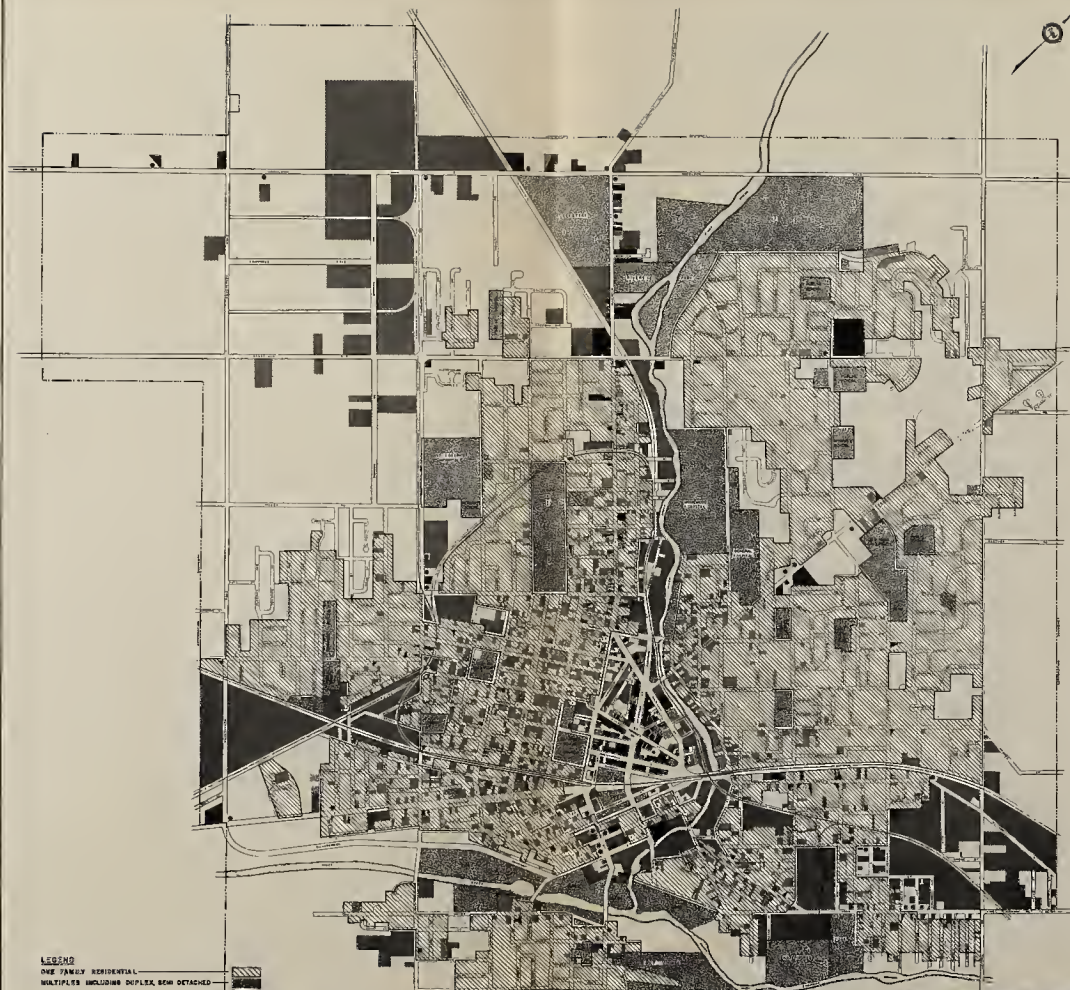
Wherever a single lot or building is used for more than one land uses category, these uses have been shown as combined residential and commercial or residential and industrial.

These combined uses normally appear in residential areas in situations where part of a residential unit is used either for commercial or light industrial purposes or in a case where industrial uses take place in the rear yard.

These combined uses of residential units frequently indicate a deteriorating influence in a residential area and suggests that some neighbourhood conservation practice should be considered.

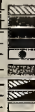
A further study of these combined uses will have to be made in conjunction with the Zoning Bylaw.

The foregoing are general comments on the existing land use only, and the conclusions and recommendations which can be drawn from the study will have to be combined and considered with the conclusions of the other studies taking place before any final decisions should be reached.



LEGEND

ONE FAMILY RESIDENTIAL
 MULTIFAMILY INCLUDING DUPLEX, SEMI DETACHED
 RETAIL COMMERCIAL
 INDUSTRIAL
 SERVICE STATION
 PUBLIC BUILDINGS, INSTITUTIONS AND
 PUBLIC OPEN SPACE
 COMMERCIAL — RESIDENTIAL & INDUSTRIAL
 VACANT



CITY OF QUESNEL
 PLANNING STUDY 1960
 GENERALIZED LAND USE

ORDER AND SMITH
 PLANNERS AND CONSULTANTS
 KITCHENER
 PROJECT #40-20

DECEMBER 1960 PLATE No. 6

Chapter 7.

RESIDENTIAL LOT SIZES.

Planning Studies 1960

City of Guelph.

RESIDENTIAL LOT SIZES

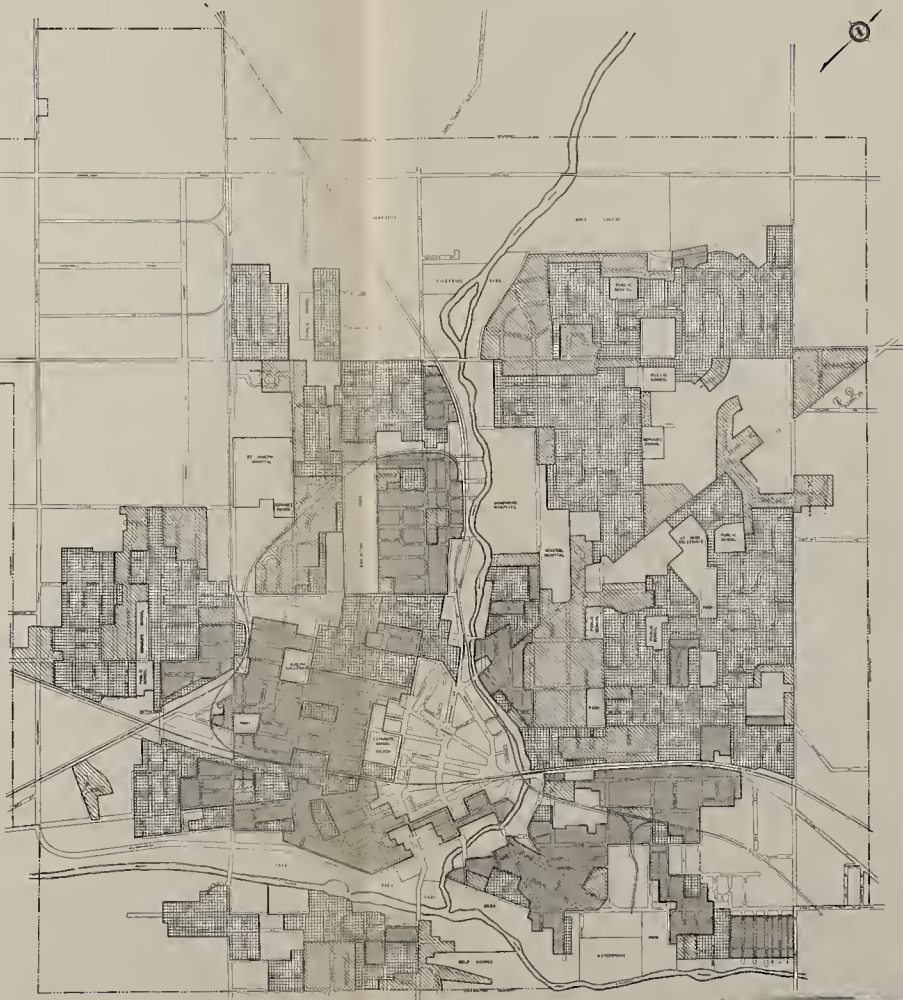
(see Plate No. 6)

Plate No. 6 indicates areas of average residential lot width in three categories --under fifty feet, --fifty to sixty feet--over sixty feet. While it is obviously the purpose and intent of a Zoning Bylaw to require lot areas and yard space regulations adequate to promote the health, safety, convenience, and welfare of the inhabitants, it is equally obvious that when dealing with the predominately "built up" areas that the regulations must allow for the development of the remaining vacant lands.

For this reason a special study has been made of residential lot sizes.

The study clearly indicates the changing trend in lot size requirements. Much of the older sections of the City are subdivided into lots with average widths of less than fifty feet while the more recent development shows the desire for increased lot width and almost all subdivision within the last ten years is for lots with minimum widths ranging from fifty to sixty feet. Many of the latest subdivisions in the City indicates that the trend toward increased lot width continues and the great majority of lots being created now have widths in excess of sixty feet.

These factors will be not only important in considering the revisions to the Zoning Regulations, but also in predicting the future densities and the areas which will be required for the future growth of the municipality.



LEGEND
 RESIDENTIAL LOT SIZES
 UNDER 50 FT. ———
 50 FT. TO 60 FT. ———
 OVER 60 FT. ———
 NOT SHOWN ON NON-RESIDENTIAL

CITY OF GUELPH
 PLANNING STUDY 1960
 RESIDENTIAL LOT SIZES

ORDEN AND SMITH
 PLANNING CONSULTANTS
 KITCHENER

DECEMBER 1960 PROJECT 445-100 PLATE N. 6

CHAPTER 8.

EXISTING BUILDING CONDITIONS

Planning Studies 1960

City of Guelph.

EXISTING BUILDING CONDITIONS

(see Plate No. 7)

Each building in the City was classified by visual inspection of external appearance and size and condition and this information was noted along with the uses on the detailed maps.

This information has been compiled on the Existing Building Conditions Study Map, Plate No. 7.

These studies indicate that there are no areas within the City where building deterioration is wide spread, but there are several areas where there is a spotting of older buildings which have been permitted to deteriorate and although their numbers are not sufficient at the present time to indicate areas of blight or re-development, they are like the proverbial rotten apple in the barrel.

Where these individual blighted buildings show up surrounded by buildings in the "fair" category, they would suggest that more detailed studies are indicated to see what planning programme may be necessary to conserve and rehabilitate the neighbourhood before further and more serious deterioration takes place.



LEGEND

EXCELLENT	
GOOD	
FAIR	
OBSOLETE	

CITY OF GUELPH
PLANNING STUDIES 1960
EXISTING BUILDING CONDITIONS

BRIDEN AND SMITH
PLANNING CONSULTANTS
KITCHENER
DECEMBER, 1963 PROJECT 443-60 PLATE No. 1

CHAPTER 9.

POPULATION DISTRIBUTION

Planning Studies 1960

City of Guelph.

POPULATION DISTRIBUTION

(see Plate No. 8)

Plate No. 8 shows population distribution by wards for the years 1950, 1955, 1959. The total population in each ward for each of these years is broken down into four age groupings:

1. Pre-school 0 to 4 years.
2. School age 5-19 years.
3. Working force 20-64 years.
4. Senior citizens 65 years plus.

This breakdown shows some very interesting trends. While the total population of the City has increased approximately 40% in the ten years indicated the total increased per ward has varied from under 5% in St. Patrick's to almost 75% in St. George's.

Equally marked variances are evident in the number of school age children in the various wards, and those pre-school age who will be requiring school-room space during the next five years.

Even more significant, the actual number in the working force age range (20--64) has actually decreased in some wards. This age group category includes the younger family group and these of course are the groups which will produce the school children of the future. In any area where the working force age

group is decreasing, it is reasonable to expect that there will be corresponding decreases in the future in the pre-school and school age children and a subsequent decrease in school requirements.

A much more detailed study of this population distribution in each grouping will be made in conjunction with the future school needs studies and the studies to determine the type of neighbourhood and the type of neighbourhood facilities which will be required in the future.

Several factors of major consequence are evident in the present trends which considerably alter the percentages in age groupings by 1980.

The first is the increase in life expectancy and in the senior citizens group. The need for special living accommodation and recreational facilities for this age group is becoming more apparent all the time and provision for these facilities will have to be provided in the future residential neighbourhoods.

A major up-swing in family formations is predicted for the early 1970. During this time the tremendous number of children born immediately following World War II will have reached family forming age and it is to be expected that during the early 1970 another great surge in the demand for housing accommodation can be expected.

Following this major up-swing in family formation in the seventies, another major surge in primary school expansion must be contemplated for the late 1970 and early 1980

All of these factors must be taken into consideration in the formation of our future residential neighbourhood units.

TABLE 6

POPULATION DISTRIBUTION

BY WARDS AND AGE GROUPS

SELECTED YEARS - 1950 - 1955 - 1959

Years	Pre-School 0-4 yrs.	School Age 5 - 19	Working Force 20-64	Senior Citizens 65 +	Total
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ST. ANDREWS

1950	450	1117	2691	442	4711
1955	479	1171	2691	554	4895
1959	502	1248	2674	578	5002

ST. DAVIDS

1950	495	932	2357	427	4211
1955	628	1412	3098	587	5725
1959	738	1849	3501	645	6733

ST. GEORGES

1950	481	889	2606	277	4253
1955	729	1304	3292	442	5767
1959	976	1892	3974	553	7395

ST. JAMES

1950	371	950	2364	318	4003
1955	454	1032	2468	390	4344
1959	531	1226	2624	426	4807

ST. JOHNS

1950	247	703	1687	292	2929
1955	586	1077	2793	503	4959
1959	872	1714	3695	554	6835

ST. PATRICKS

1950	627	1500	3706	388	6221
1955	724	1573	3871	497	6665
1959	761	1573	3653	527	6514

YEAR	PRE SCHOOL 0-4 YRS	SCHOOL AGE 5-19	WORKING FORCE 20-64	SENIOR CITIZENS 65+	TOTAL
1950	495	932	2387	421	4035
1955	628	1412	3058	587	5725
1959	738	1819	3591	645	6793

YEAR	PRE SCHOOL 0-4 YRS	SCHOOL AGE 5-19	WORKING FORCE 20-64	SENIOR CITIZENS 65+	TOTAL
1950	247	737	1697	292	2999
1955	366	1077	2725	505	4955
1959	572	1714	3695	504	6885

YEAR	PRE SCHOOL 0-4 YRS	SCHOOL AGE 5-19	WORKING FORCE 20-64	SENIOR CITIZENS 65+	TOTAL
1950	360	1117	2097	442	4016
1955	479	1379	2531	554	4943
1959	609	1641	2875	578	5903

YEAR	PRE SCHOOL 0-4 YRS	SCHOOL AGE 5-19	WORKING FORCE 20-64	SENIOR CITIZENS 65+	TOTAL
1950	483	889	2606	277	4255
1955	729	1304	3292	442	5767
1959	976	1995	3974	553	7528

YEAR	PRE SCHOOL 0-4 YRS	SCHOOL AGE 5-19	WORKING FORCE 20-64	SENIOR CITIZENS 65+	TOTAL
1950	371	950	2264	316	4001
1955	484	1031	2618	392	4525
1959	551	1226	2824	425	5026

YEAR	PRE SCHOOL 0-4 YRS	SCHOOL AGE 5-19	WORKING FORCE 20-64	SENIOR CITIZENS 65+	TOTAL
1950	427	1000	2706	368	4501
1955	724	1373	3871	497	6465
1959	961	1573	3985	527	7046

CHAPTER 10.

POPULATION DENSITY

Planning Studies 1960

City of Guelph.

POPULATION - DENSITY (See Plate No. 9)

Plate No. 9 shows population and density areas throughout the City. The limits of each density area are arbitrary and are not related to the existing zoning but rather to groups of uses found in the existing land use studies.

The division and limits are based on changes in use either from residential to non residential uses (Industrial Commercial Park etc.) or from one type of residential use to another.

Between the areas outlined and numbered are areas of low density either because the area is other than residential in nature or because the area is vacant.

The areas as outlined contain something over 80% of the total population of the City.

Following is a detailed discussion of each of the density areas shown on Plate No. 9 to indicate the present and future uses, the residential acreage of each unit, the existing population and the existing population density, the predicted population and population densities for 1980.

The figures on acreage density and population have been rounded.

AREA 1

This residential area is bounded on the north and west by the Canadian National Railway right of way, on the south by London Road and on the east by Kathleen Street.

The area is fully developed, - in the main by one family dwellings, but existing land use studies indicate the trend toward conversion of some of the larger houses and the intrusion of multiple residential units particularly in the block between Westmount Road and Kathleen Street. There seems to be little doubt that this trend will continue. The remainder of the area is fairly new one family dwelling units and there seems to be little likelihood of change.

The Gross Residential Acreage -----47

The Existing Density -----15

The Existing Population -----700

It is assumed that the density in the area referred to above, between Westmount Road and Kathleen Street, will increase as the trend toward multiple uses continue from the present 15 persons per acre to approximately 25 persons per acre. This density increase over an area of approximately 18 acres would indicate a potential population increase of 180 persons.

Little increase can be expected in the rest of this area.

Predicted 1980 population ----880.

AREA 2

This area is bounded on the north and east by Canadian National and Canadian Pacific rights-of-way, on the west by Exhibition Street and on the south by London Road. The area is cut in two by a major traffic Street (Woolwich) and the effect of this traffic street can be clearly seen by the land uses adjacent to it.

Conversion of the older homes to multiple uses is advanced, and the trend toward commercial uses along the Woolwich Street frontage is becoming apparent. This development is relatively small and spotty because of the high costs of assembling adequate areas for larger commercial uses.

The desire for further multiple uses will undoubtedly continue in this area.

The Gross Residential Acreage -----81.5.

The Existing Density-----23.

The Existing Population -----1900.

Population increase through further multiple use will be offset to a large extent by conversion of existing residential uses to commercial. The overall increase will be minor.

Predicted 1980 population ----2100.

AREA 3

This area lies along Norfolk and Woolwich from Suffolk to McTague on the West side and from Norwich to London Road on the east side.

This area might logically have been included with Area 2 but is considered separately because of greater overall density and the amount of commercial use.

The expansion of the downtown commercial area has been restricted by the river on the east, the railway on the south and to a lesser extent by churches, schools and public buildings on the west. The existing land use clearly illustrates the affects of these barriers and commercial expansion has had a definite tendency to move northward.

There seems to be little doubt that there will be pressure for further commercial uses and multiple development in this area.

The Gross Residential Acreage -----9.5

The Existing Density -----29

The Existing Population -----270

No major change in overall population is anticipated.

Predicted 1980 population ----300.

AREA 4

This large area is bounded on the north by London Road on the east by Norfolk Street on the south by the Canadian National Railway and on the west by Edinburgh Road.

This is one of the older areas of the City, with many larger homes, a great number of which have been duplexed or made into apartments. Commercial and industrial intrusion of this area has been kept at a minimum and the area is serving the needs of a large segment of the population which require the type of accomodation the area provides.

The fact that the area has many fine old homes and that it has been in existence for a good number of years gives it a charm and attraction that is often missing in newer raw looking subdivisions. Future zoning must allow for the conversion of more of the larger homes in the area but must at the same time provide adequate control and regulation to maintain the desirable features of the area.

The Gross Residential Acreage -----194

The Existing Density ----- 27.5

The Existing Population -----5350

In the main, the development of this area would appear to be fairly complete and little population increase is expected.

Predicted 1980 population --5500.

AREA 5

This area bounded on the east by Edinburgh Road, on the west by the Corporate limits and running from the Canadian National rights-of-way on the south to the limit of development south of Willow Road contains in the main, fairly new one family residential units. Some multiple uses are located on the easterly section of this area in that part lying between Alma Street and Edinburgh Road.

It is assumed that multiple uses in the area referred to will increase as a natural expansion of the multiple uses in Area 4 and that the density in the approximately 60 acres lying between Alma and Edinburgh will increase from the present 15 persons per acre to approximately 25. This will allow for an additional population increase of approximately 600.

Little population increase can be expected in the remainder of the area.

The Gross Residential Acreage -----151.

Existing Density ----- 15.

Existing Population -----2325.

Predicted 1980 population ----2925.

Area 6

This area is the central business area of the City. Although there are some multiple residential land uses within the limits of the area as described. The resident population is in the main, contained in apartment units above ground floor commercial uses.

The value of sites in this area will continue to increase, and it seems unlikely that any major new residential construction will take place. Some apartments above new commercial uses will perhaps be provided, but the trend across Canada is away from this type of development.

There will undoubtedly always be requirements for some such units, and it is predicted that during the study period the population of this area will remain fairly constant.

The present population is in the neighbourhood of 1500 and no increase is contemplated.

AREA 7

This is a fairly extensive residential area, lying south of the Canadian National Railway to the river, and from Beachwood Ave. on the west to the north branch of the Speed on the east.

This again is an older residential area and in some parts the houses are quite small. Many of the larger homes have been converted to duplex and apartment use, and the area is characterized by a spotting of commercial and light industrial uses.

It would seem that the trend toward light industrial and wholesale distribution uses will probably continue, particularly in the area north of Waterloo Street to the tracks.

The creation of Silvercreek Parkway together with the river improvements and open spaces will certainly increase the desirability of the area back of the lots facing Waterloo Ave. and overlooking this development, for residential purposes. This Parkway and river development will be particularly attractive for apartment uses, and the large amount of open space would make this a desirable area for such high density use.

The Gross Residential Acreage ----- 157.

The Existing Density -----22.

The Existing Population -----3500.

It is estimated that the redevelopment of some existing residential lands in the north of the area will tend to balance any increase in population through multiple construction in the south part of the area and that there will be little change in the total population.

Predicted 1980 population ----3500.

AREA 8

This area is generally defined by York Road on the south, Huron Street on the east, the Canadian Pacific Railway on the north and the Speed River on the West.

This is another area of older development and considerable conversion to multiple uses is evident.

There is little evidence of new residential development in this area and the intrusion of Commercial and Industrial uses is marked. The area is surrounded on three sides by industrial uses and its future as a desirable residential section seems unlikely. It would seem more reasonable to expect further conversion in this area to non-residential uses.

The south limits of this area overlook the park and river development scheme and there would appear to be every likelihood that this scheme will attract residential reconstruction and redevelopment in the southerly sections of this area, but it is likely that the overall residential population will decrease.

The Gross Residential Acreage -----85.

The Existing Density -----22.8.

The Existing Population -----1938.

The predicted 1980 population ----1200.

AREA 9

The portion of this area north of York Road is squeezed between two existing industrial developments and scattered industrial uses within the area would indicate the gradual conversion of this area to industrial uses. The population of this part of the area will gradually decrease as industrial uses take over.

The portion of the area south of York Road is almost completely residential. In this ward as a whole the total population and the number of school age children has increased very little since 1950; and the young families (working force 20-64) has actually decreased. These figures would indicate that this is a "mature" development where both the families and the homes are getting older. There is relatively little new residential development taking place and the younger families would appear to be seeking housing elsewhere.

The area will require careful consideration and active participation by the Planning Board and Council if it is to be revitalized and rejuvenated.

The Gross Residential Acreage -----60.5.

The Existing Density -----28.5.

The Existing Population -----1727.

The predicted 1980 population ----1000.

AREA 10

This area lies between Gordon and Edinburgh and south of the Speed River. It is a relatively new, predominantly single family residential area --- with some apartment development. There are a fair number of vacant lots through the area which are undoubtedly very attractive building sites.

It would appear that in the future some demand for additional apartment buildings can be expected but in the main, the development of the area will be an in-filling of better class one family residential units.

The Gross Residential Acreage -----71.5.

The Existing Density -----16.6.

The Existing Population -----1193.

Population of the area will increase through in-filling on vacant lots and probably some additional small apartment development.

The predicted 1980 population ----2000.

AREA 11

This area lying west of Edinburgh and south of the river is very similar in its development to Area 10, but shows slightly lighter existing densities.

The area is developed almost entirely with new single family residential units. The future use of the vacant areas to the south west of this development could influence the future of the developed areas. The attractiveness of this development and the equally attractive residential uses adjacent to it, but outside the present City limits, would indicate that the vacant lands referred to should be encouraged to develop in a manner similar to the existing residential development.

The Gross Residential Acreage -----23.

The Existing Density -----14.

The Existing Population -----325.

Population increase will be primarily through infilling of one family residence uses.

The predicted 1980 population---450.

AREA 12

This residential area lies between the Canadian National and the Canadian Pacific Railway rights-of-way and is bounded roughly by Arthur on the west and Garobaldi on the east.

This is an older residential area showing some conversion to duplexing and apartments and also a fair number of combined uses. Many of the lots in the area are relatively deep and therefore attractive for conversion to distributing, warehousing, storage and small industrial uses.

It would appear that these would be the best uses for the area in the future and that the amount of residential use will continue to decrease.

The Gross Residential Acreage-----56.4.

The Existing Population Density-----20.

The Existing Population -----1130.

It would seem that because of its location and the nature of the existing subdivision that the increase in commercial industrial uses of the area will be fairly rapid.

The predicted 1980 population----250.

AREA 13

This area is bounded by the Canadian National Railway on the south, the Speed River on the west, Stuart and Louisa Streets on the east and by Homewood and the General Hospital on the north.

This is a fine old residential section of larger homes which are now being converted to duplex and apartment uses. There is no doubt that this trend will continue and that the area will provide most desirable living conditions for the increasing number of people who desire this type of accommodation. With a minimum of control of these conversions this area can retain its high value both assessment wise and as an area of high class, high value apartment units. Its location and proximity to the Central Business District will further enhance its value for this type of development.

The Gross Residential Acreage-----124.

The Existing Density-----20.7.

The Existing Population -----2560

It is assumed that the density over the entire area will increase from the present 20.7 to approximately 25 during the study period.

The predicted 1980 population----3100.

AREA 14

This area includes the large new residential district south of Eramosa Road and north of the Canadian National Railway on the east side of the City to Victoria Road.

The area is all fairly recent development, in the main one family residences. There is some apartment development and undoubtedly there will be further requests for apartment uses. In the main the area is fully developed and with the type of residential units for which there is little likelihood of conversion to any form of multiple uses during the study period.

Population increase in the area will likely to be limited to in-filling of present vacant lots with one family units with some minor new multiple construction. It is estimated that the overall density of the area will increase from the present 12.8 to approximately 13.5 during the study period.

The Gross Residential Acreage -----329.

The Existing Density -----12.8.

The Existing Population -----4216.

The predicted 1980 population ----4700.

AREA 15

This is the area of new residential development east of the Speed River and north of Eramosa Road.

This area of new development is primarily one family units with some new apartment units. The area is similar in nature to Area 14, with the major difference being a trend toward larger lot sizes which indicates a slightly lower overall density when the area is fully developed.

It is obvious that there is little likelihood of conversion of uses in this area during the study period and that population increase will occur only from infilling of vacant lots - primarily with one family dwellings and possibly some additional minor apartment development.

The Gross Residential Acreage -----303

The Existing Density -----13.

The Existing Population -----3950

The predicted 1980 population ----4700.

AREA 16

This area lying to the east of the Canadian Pacific Railway and north of the Canadian National Railway is bounded on the north by Speedvale Avenue and on the west by Westmount. The area is a well established residential area containing one family residential units almost completely. These are all fairly new units with little possibility or likelihood of conversion to multiple uses in the near future.

Some increase can be expected through in-filling of vacant lots during the study period but there is little likelihood of increased density or any major increase in total population through the time of the study period.

The Gross Residential Acreage -----121.

The Existing Density -----15.

The Existing Population -----1825.

The predicted 1980 population ----1900.

The foregoing areas presently contain approximately 34,000 of the 38,000 residents of Guelph. It is estimated that by 1980 these areas will contain approximately 36,000 or an additional 2,000 people.

TABLE 7

SUMMARY RESIDENTIAL DENSITY

1960 - 1980

See PLATE 9

AREA	GROSS RESIDENTIAL ACREAGE	DENSITY 1960	POPULATION 1960	PREDICTED POPULATION 1980
1	47	15	700	880
2	81.5	23	1900	2100
3	9.5	29	270	300
4	194	27.5	5350	5500
5	151	15	2325	2925
6	Central Business District		1500	1500
7	157	22	3500	3500
8	85	22.8	1938	1200
9	60.5	28.5	1727	1000
10	71.5	16.6	1193	2000
11	23	14	325	450
12	56.4	20	1130	200
13	124	20.7	2560	3100
14	329	12.8	4216	4700
15	303	13	3950	4700
16	121	15	1825	1900
Total *	1813.4		32909	34,505

* Exclusive of the Central Business District.

We have now investigated the capacity of the existing "built up areas" and we must add to that the capacities of the vacant residential areas within the limits to determine the Municipalities' total capacity to absorb additional population. There are four main vacant residential areas and these are discussed separately.

The first such major area is in the south-west section of the City, south of the river and west of Edinburgh Road. In this area, there are approximately 165 acres zoned for single family residential use. Unfortunately, in this area at the present time, approximately 120 acres are either used by Canadian Lime and Gypsum and gravel pit operations or are blighted by these uses.

Although it would seem obvious from the type of development that has gone on in this area both within the City and immediately adjacent to the southerly limits of the City that the Zoning Bylaw is quite correct in its designation of this area for single family use. It is felt that because of the blighting affects of the objectionable industry and uses in the area, it can only be assumed that approximately 50 acres of this area will be useable and attractive for single family residential construction in the study period. We have therefore, assumed that 50 acres are available and that this 50 acres would provide approximately 200 single family

residential lots and at a density of approximately 3.4 persons per household. This area will provide accomodation for an additional 650 people.

The second vacant residential area, we have referred to as the central west section, in the area south of Speedville along Willow and Silver Creek Road. In this general vicinity there are approximately 100 acres of land zoned for single family use. Assuming again a proximately four lots to the acre, this area would provide for an additional population of approximately 1,350.

In the central west section there is also at the present time approximately 16 acres zoned for general residential use and assuming an increased density in this general residence area due to the permitted multiple uses an additional 400 people can be accommodated.

It would seem then that in the central west section of the existing zoning regulation accomodation can be found for approximately 1,750 additional residents.

The third major vacant residential section we refer to as the east section being the area east of Victoria Road and south of Ermosa. In this general vicinity there is a total of approximately 300 acres zoned for single family use. At normal single family residential density, the potential area for additional population would be in the neighbourhood of 4,000.

The fourth major vacant residential area we refer to as the north section being area north of Speedvale Avenue. In this area there are approximately 250 acres available zoned for single family residential uses which provide for additional 3,400 population. Also in this area there are approximately 40 acres of land zoned for residential use and assuming the higher density figure for this area, it would provide for approximately 1,000 or a total in the north section of space to accommodate approximately 4,400 additional population.

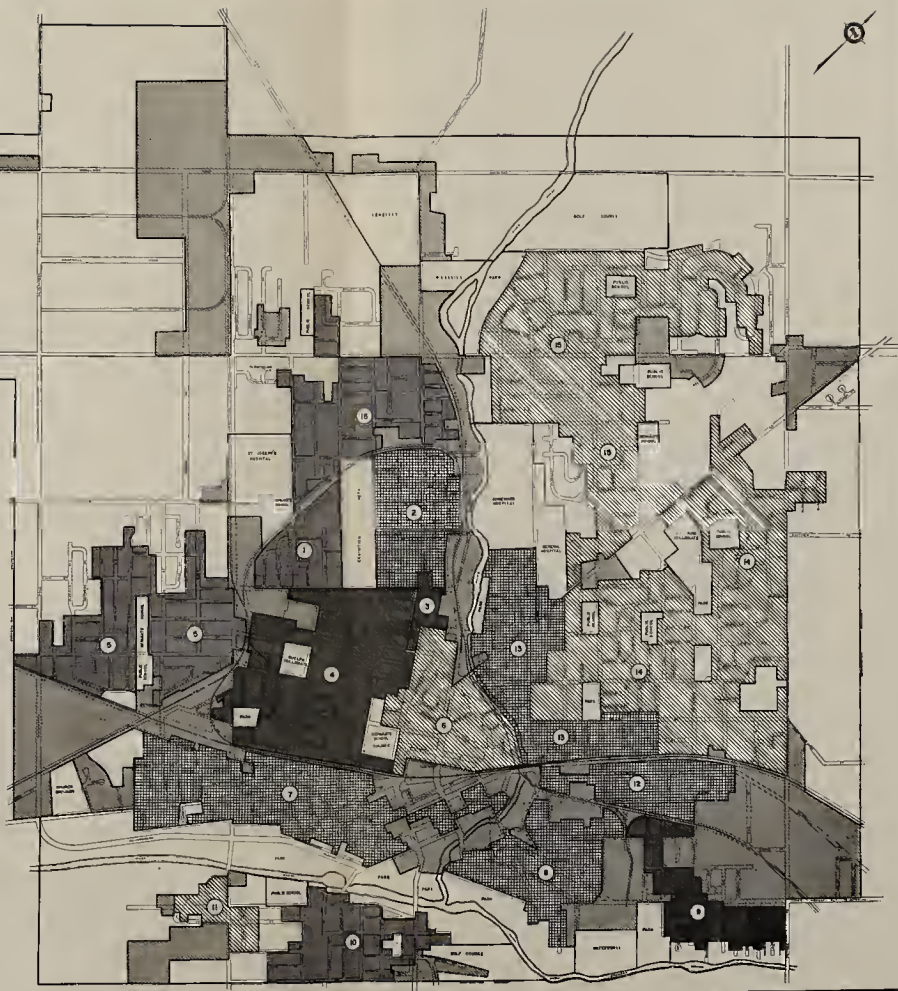
In totalling these figures it would appear:

1. That approximately 2,000 additional people can be accommodated in the existing developed residential areas.
2. That the areas presently available for residential development will provide space for approximately 11,000 residents.

We, therefore conclude that there is area available within the present limits of the City of Guelph for an additional 13,000 population under present zoning regulation and building conditions. To accommodate this population assumes of course, an almost full development of all residential presently available.

Population studies indicate that provision will have to be made in the next twenty years for a total additional population of approximately 37,000 people and since only 13,000 of these can be accommodated within the present City limits, we must assume that additional areas will have to be provided outside the existing

City limits to provide for approximately 24,000 people by the year 1980. Assuming a figure of approximately 12 persons per acre, this would indicate the need for approximately 2,000 acres of land outside the present limits to accommodate the forecast residential population.



LEGEND

DENSITY PER ACRE

0 TO 8

9 TO 14

15 TO 20

21 TO 26

27 TO 32

SEE EXPLANATION OF SYMBOLS

CITY OF SULPHUR
PLANNING STUDIES 1980
POPULATION DENSITY
RATHEN AND SMITH
PLANNING CONSULTANTS
SULPHUR, OKLAHOMA
DESIGNED 1980 PROJECT 442-100 PLATE 20-8

CHAPTER 11.

WATERMAINS, STORM & SANITARY SEWERS.

Planning Studies 1960

City of Guelph.

WATERMAINS STORMS AND SANITARY SEWERS

Plates No. 10 and No. 11 indicate the principal main and sewer trunks presently serving the City for water distribution, sanitary and storm sewage collection.

In this section of study it is not intended to deal in detail with these trunks and mains and the plans are prepared primarily to indicate the areas both within the City and without which could be most economically and reasonably provided with water and sewage facilities from the existing main trunk services.

WATER

The water supply and distribution system and the potential further sources of water would appear adequate for Guelph's foreseeable needs.

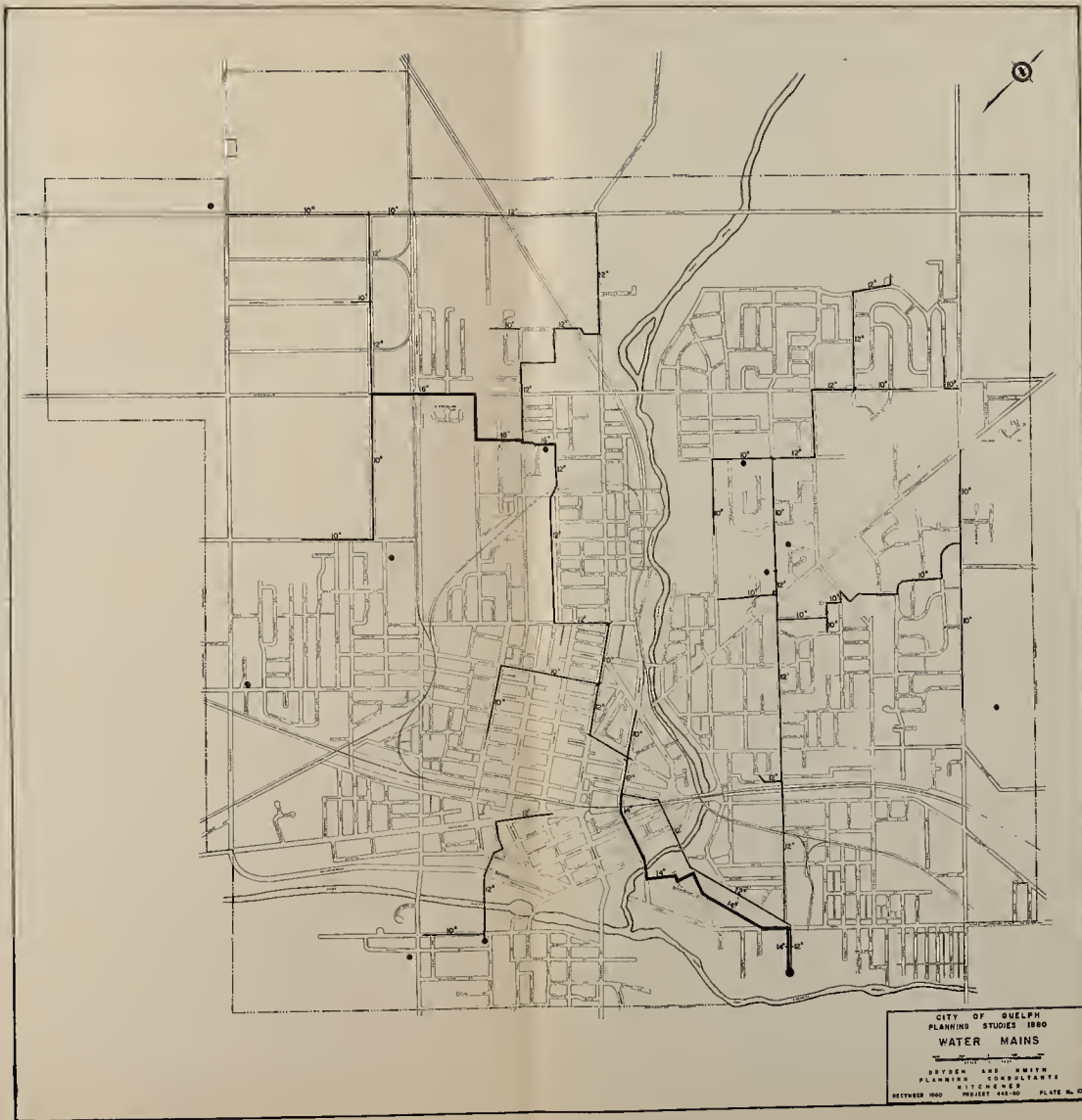
The time may well come that consideration will have to be given to the storage and use of water from the rivers. Studies by the Ontario Water Resources Commission and the Grand River Conservation Commission would indicate the use of river water is practical if it becomes necessary. With proper dams and ponding, the supply will far exceed the foreseeable needs of the entire area.

STORMS DRAINS AND SANITARY

The rivers through the City not only act as source of supply if necessary but serve to accept and carry off the effluent from the storm and sanitary sewage system. With two branches of the river forming a tripod through the City, there would appear to be no major problems in providing outfall either for surface water through the storm drainage system or for the effluent from the sanitary system.

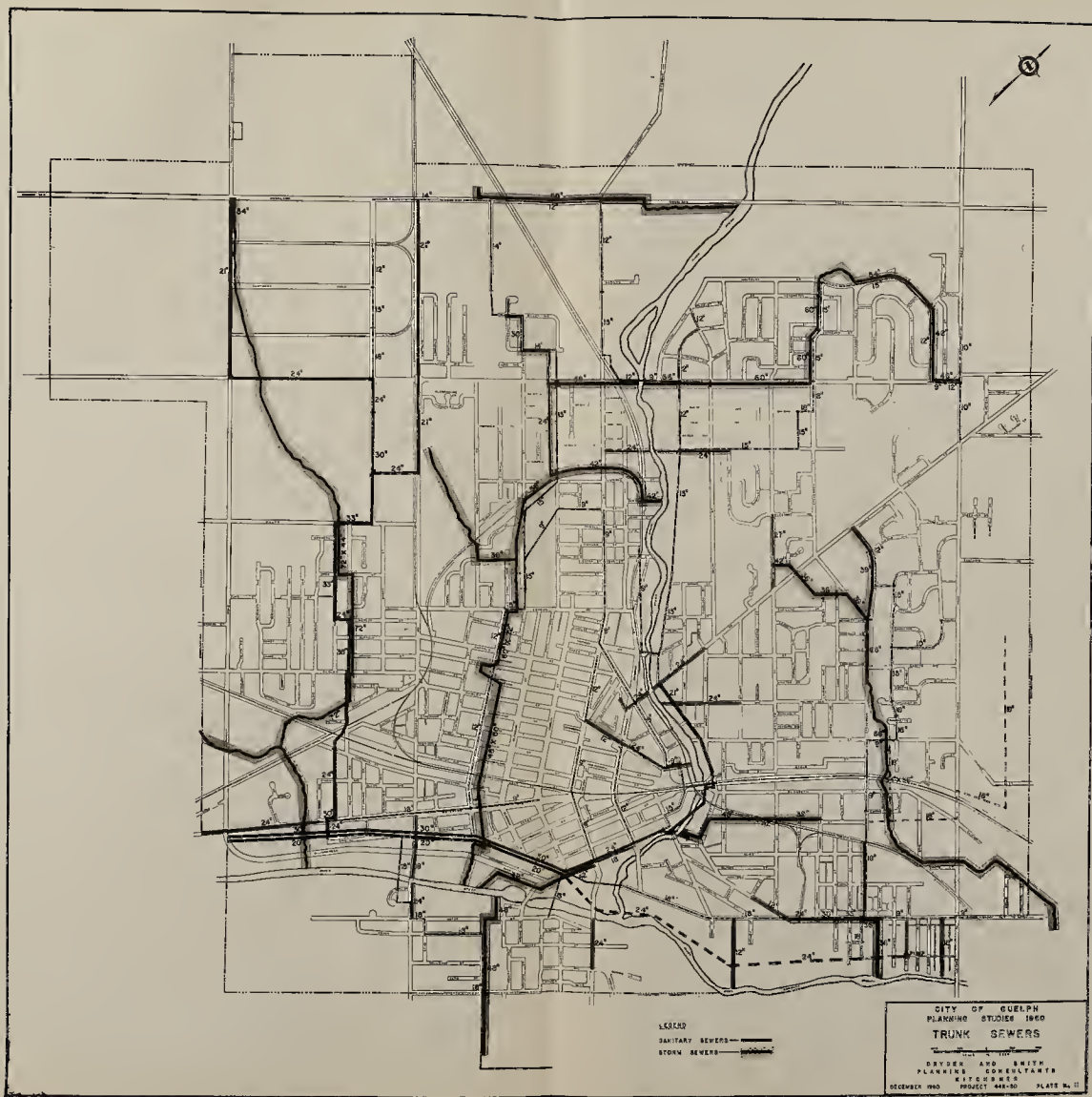
We understand that the design capacity for the existing sewage plant is adequate to serve a population of approximately 60,000. The forecast population increase rate would indicate that this plant will serve adequately until approximately 1974 or 1975. At that time it is probable that additions will have to be provided to the sewage disposal plant.

The capacities and extensions of these main services will, of course, form the back-bone of Guelph's entire future development programme. Additional study and comment will be made of these facilities when consideration is being given to future development areas.



CITY OF GUELPH
PLANNING STUDIES 1980
WATER MAINS

BYSTON AND SMITH
PLANNING CONSULTANTS
KITCHENER
DECEMBER 1980 PROJECT 624-80 PLATE No. 2



LEGEND

SANITARY SEWERS ———

STORM SEWERS - - - - -

CITY OF GUELPH
PLANNING STUDIES 1960
TRUNK SEWERS

BYRON AND SMITH
PLANNING CONSULTANTS
KITCHENER

DECEMBER 1960 PROJECT 448-80 PLATE No. 11

CHAPTER 12.

GEOLOGY & GEOGRAPHY

Planning Studies 1960

City of Guelph.

GEOLOGY

For the purpose of this planning study geology is considered to be the physical characteristic of the sub-surface structure of the earth.

In the Guelph area there are two dominant bedrock formations Salina and Guelph Dolomites with smaller formations of Lockport and Norfolk. As a whole, the bedrock formations throughout the County would appear to be deeply buried and drilling records which are available would indicate that in most areas bedrock lies at depth varying from 35' to 170'.

There are of course isolated locations within and surrounding the City of Guelph where the rock formation is much closer to the surface, but these areas are relatively small and do not seriously effect an overall planning study, with the possible exception of development in the general area of the Guelph Reformatory, through the river valleys, and east along No. 7 Highway and the Canadian National Railway Line. With the exception of these rather isolated areas the bedrock in most cases has a minimum of ten to fifteen feet of earth and gravel overlay.

GEOGRAPHY

Again for the purpose of the Planning Study, Geography has been defined to mean the form and character of natural features and condition of the ground's surface.

The most predominate geographic features in the general Guelph area are the long oval shape hills known as Drumlins, the long gravel ridges referred to as Eskers and the low poorly drained spillways between these formations. The Esker formation is left from the glacial movement through the area and this movement was generally from north-west to south-east. So the general alignment of these long ridges and hills is generally north-west and south-east.

Between the Esker formations are the spillways which normally have very inadequate drainage. These long troughs generally run in a north-west, south-east direction, and are frequently wet, swampy and poorly drained.

To the south of the City of Guelph about half way between the present City limits and 401 Highway, we come to an area of hilly till. This area is very rough and rolling with complex slopes and entrapped fairly extensive wet swampy areas. This piling up of material would indicate that during the glacial period a stationary front existed, in this area and that the ice front was melting at the same rate as the forward movement of the glacier. Consequently in this melting process, great quantities of rock,

and gravel were deposited and formed the hilly mounds that are in evidence to-day.

The river valleys running through Guelph and the fairly extensive but widely distributed swampy troughs, referred to above, in the spillways would appear to be the major impediments to the urban growth of the area.

CHAPTER 13.

SOILS

Planning Studies 1960

City of Guelph

SOILS

Plate 12 is an abstracted and simplified soil map of the areas throughout and surrounding the City.

Because of the glacial action to this area, the surface deposits are complex and varied. The Soils Department of the Ontario Agricultural College classifies approximately twenty-five distinct soil types within the Study Area. Because of the complexity in the number of soils, for the purpose of this Study we have grouped the soil types into three main categories.

Group 1. Shown on Plate No. 12, as "Good Development Land" is land with a reasonable depth of soil with fairly even slopes which provide ease in building and in providing services and through out which the drainage is good. From the point of view of soils these are the areas which would seem to offer the best conditions for further urban development.

Group 2. Which is the area shown on Plate No. 12 as "Fair to Poor Development Land" indicate groups of soils which themselves are fair to poor and where the slopes, particularly in the southern section, are very irregular and in some cases steep. Development, drainage and servicing of these areas would be more difficult than the areas in Group No. 1.

Group 3. Are the areas shaded black on the map. These are the spillway areas containing unstable soils. They are depression lands with very poor drainage in most cases, swamp land which is not only impractical for building purposes but are extremely difficult to handle for surface drainage and for the installation of storm and sanitary sewer facilities. Wherever possible development of these areas should be discouraged.



CHAPTER 14.

SLOPES

Planning Studies 1960

City of Guelph.

SLOPES

Plate No. 13 is a Study to indicate the general condition of slope throughout the areas surrounding the City. The areas shaded in a light green are areas which the general slope condition is moderate, where the slopes are gentle and mainly even and not complexed slopes. These would indicate areas where building and servicing would be most practical.

The areas cross-hatched are areas of moderate to very steeply sloping inclines including many areas (again particularly in the south) of very steep and complex slopes. These areas make less desirable building areas because of the slope and create problems both in surface drainage and in the installation of storm and sanitary sewers.

The areas shaded in black are the depression lands where the slopes are normally less than one percent and these areas are most unsuitable for building purpose and would be most expensive to drain and to service.



CHAPTER 15.

NATURAL DRAINAGE AREAS

Planning Studies 1960

City of Guelph.

NATURAL DRAINAGE AREAS

The City of Guelph lying at the confluence of the Speed and Eramosa Rivers enjoys a great natural drainage area. The natural drainage for many miles to the north, south and east drain naturally to the area of confluence of these two rivers. The lands surrounding the City is served by many subsidiary drainage basins which provide natural flow toward the City.

Plate No. 14 shows the location and extent of each of these drainage basins and the approximate location and direction of flow of the main drainage through each such basin.

The extent to which services could be provided north and east along the valleys of the Speed and Eramosa Rivers are almost limitless and the sub-drainage areas feeding these main valleys provide lands extending from two to five miles in all directions from the centre of the City which could be drained by gravity along the natural drainage courses to the existing Municipal trunk services.

Any future extension of services beyond the present limits would logically follow the low point in one or more of these major drainage areas and the extent which each such trunk could most advantageously serve would be to the break between the drainage areas as shown.

Besides indicating the areas which can be easily and advantageously drained into the present system the study also indicates those areas in which servicing difficulties appear obvious because the natural drainage of these areas is away from the City.

When all the Planning Studies are completed and the information analyzed it is expected that certain of these drainage areas will prove to be the "natural" areas for the further urban expansion of the City of Guelph.



